



# Developing skills in scientific writing

John Giba

Appendix  
Answers to exercises

# Developing skills in scientific writing

John Giba

## Appendix Answers to exercises





# List of exercises

## 1. Structure and organization

- Exercise 1: Decide whether these statements about the organization of an IMRaD paper are true or false.
- Exercise 2: Put the sentences from this introduction in the most logical order.
- Exercise 3: Put the sentences from this materials and methods section in the most logical order.
- Exercise 4: Decide in which sections of an article the following statements would be most appropriate.

## 2. Scientific style

### 2.1. Principles

- Exercise 5: Work toward defining the principles of scientific style.
- Exercise 6: Identify the problem and suggest an approach to fixing it.

### 2.2. Clarity

#### ***Precision: Avoiding ambiguity***

- Exercise 7: Use your imagination to rewrite the following sentences and make them more specific.
- Exercise 8: Multiple choice: choose the best alternative to fill the gaps.
- Exercise 9: Complete the following sentences using the correct word.
- Exercise 10: Decide whether the words in *italics* are used correctly in the following sentences. Suggest an alternative for incorrect usages.
- Exercise 11: Correct the mistakes due to the influence of Spanish in these sentences.
- Exercise 12: Find and correct the false friends in the following sentences.
- Exercise 13: Find and correct the vocabulary mistakes in the following sentences.
- Exercise 14: Identify the words in these sentences that are too informal and replace them with others in a more appropriate register.
- Exercise 15: Correct the mistakes in the use of articles in these sentences when necessary.
- Exercise 16: Put the verb in parentheses in the correct form to agree with subject.
- Exercise 17: Underline the correct form of the verb.
- Exercise 18: Correct the use of Latin plurals in these sentences.
- Exercise 19: Complete the following sentences with the correct preposition indicating place or direction.
- Exercise 20: Complete the following sentences with the correct preposition of place.
- Exercise 21: Complete the following sentences with the correct preposition of time.
- Exercise 22: Complete the following sentences with the correct preposition: at, in, or on.
- Exercise 23: Complete the following sentences using in, into, on, onto, to, or toward.
- Exercise 24: Complete the following sentences with the correct verb-dependent preposition.
- Exercise 25: Complete the following sentences with the correct adjective-dependent preposition.
- Exercise 26: Complete the following sentences with the correct noun-dependent preposition.
- Exercise 27: Find and correct the errors in prepositions in the following sentences.

- Exercise 28: Complete the following sentences using a relative pronoun. If it is possible to omit the pronoun, put an asterisk after it.
- Exercise 29: Punctuate the following sentences according to whether they contain defining or non-defining relative clauses.
- Exercise 30: Place the modifier in the best position.
- Exercise 31: Rearrange the following sentences so that the participle clause functions correctly.
- Exercise 32: Rearrange these sentences so that it is clear what the modifiers are modifying.
- Exercise 33: Complete the sentences using the infinitive or gerund as appropriate.
- Exercise 34: Choose the best verb pattern.
- Exercise 35: Correct the mistakes in the use of verb patterns in these sentences.
- Exercise 36: Choose the modal verb that best completes the sentence.
- Exercise 37: Use Google to decide which of the following arrangements of words is preferable.
- Exercise 38: Place commas where necessary in the following sentences; justify your actions with one of the seven rules from the list below.
- Exercise 39: Decide whether the following sentences are correctly punctuated with introductory commas. Underline the introductory element and correct any mistakes.
- Exercise 40: Add introductory commas where they are needed in the following sentences.
- Exercise 41: Identify the nonessential words, phrases, or clauses in the following sentences and add the appropriate punctuation.
- Exercise 42: Decide whether the essential and nonessential elements in the following sentences are punctuated correctly. If they are incorrect, correct them.
- Exercise 43: The following sentences have essential and nonessential words, phrases, and clauses in them. Put in the necessary punctuation.
- Exercise 44: Each of the following sentences needs either a comma or a semicolon. Put in the necessary punctuation.
- Exercise 45: Add hyphens to the following sentences where necessary.
- Exercise 46: Correct the use of hyphens in the following sentences.
- Exercise 47: Put in commas, semicolons, colons, and parentheses wherever they are needed in the following sentences.
- Exercise 48: Choose the answer with the correct use of capital letters to complete the sentence.
- Exercise 49: Correct the use of capital letters in these titles where necessary.
- Exercise 50: Correct the mistakes in the use of apostrophes in these sentences.
- Exercise 51: Correct the punctuation in the following sentences where necessary.
- Exercise 52: Correct the use of numbers in these sentences.
- Exercise 53: Correct the errors in spelling due to similarities with other valid words.
- Exercise 54: Correct the errors in spelling due to Spanish influence.
- Exercise 55: Correct the errors in spelling due to double consonants.
- Exercise 56: Correct the spelling mistakes in the following text. Mixed spelling mistakes.
- Exercise 57: Identify and eliminate the ambiguity in these sentences.

***Simplicity: Avoiding unnecessary complexity***

- Exercise 58: Replace the unnecessarily complex words and phrases in these sentences with simpler ones.
- Exercise 59: Rearrange these sentences so that the verb carries the message.
- Exercise 60: Rewrite these sentences to avoid using a double negative.
- Exercise 61: Change these sentences to the active voice where desirable.
- Exercise 62: Break up these long, complex sentences to make a more intelligible text.
- Exercise 63: Expand these noun strings to make their meaning clearer.
- Exercise 64: Eliminate the unnecessary complexity from these sentences.

**Concision: Making every word count**

- Exercise 65: Eliminate the unnecessary repetitions in these sentences.  
Exercise 66: Eliminate the empty words and phrases from these sentences.  
Exercise 67: Replace the wordy expressions in these sentences with shorter alternatives.  
Exercise 68: Make these sentences more concise.

**Fluidity: Keeping the thread**

- Exercise 69: Analyze the way these texts are linked.  
Exercise 70: Underline examples of how the authors use transitions to make the text cohesive.  
Exercise 71: Analyze the order in which information is presented in these texts.  
Exercise 72: Rewrite this paragraph to improve the flow of information.  
Exercise 73: Rewrite these sentences so that the elements are parallel.  
Exercise 74: Correct the inconsistencies in terminology in the following texts.  
Exercise 75: Decide whether these sentences are written in US or UK English.  
Exercise 76: Correct the mistakes in the use of UK or US English in the following sentences.  
Exercise 77: Correct the use of abbreviations in the following texts.  
Exercise 78: Rewrite these sentences to make it easier to follow the thread.

**3. The overview**

***Titles***

- Exercise 79: Rewrite the following titles to make them more concise.  
Exercise 80: Suggest how these titles might be improved.  
Exercise 81: Select the best title for these abstracts.

***Abstracts***

- Exercise 82: Answer the questions about what is wrong with the following abstracts.  
Exercise 83: Organize the following sentences into an abstract with the subsections Background, Methods, Results, and Conclusion.

***Summary statements and conclusions***

- Exercise 84: Correct the mistakes in the conclusions of the following abstracts.  
Exercise 85: Write a conclusion based on the information provided.

**4. Putting it all together: Additional exercises**

- Exercise 86: Find and correct the mistakes due to the influence of Spanish in these sentences.  
Exercise 87: Change these sentences to make them shorter and simpler.  
Exercise 88: List specific ways to ensure the following characteristics in a scientific manuscript.  
Exercise 89: Improve these 100 sentences however you can.  
Exercise 90: Correct and shorten the abstracts to conform to the journal's requirements.

# 1. Structure and organization

## EXERCISE 1

- 1) Always begin your introduction with a specific statement of the goals of your study.  
*FALSE. You need to provide minimal background information so readers can understand the justification for your study.*
- 2) Your introduction needs to justify why you did your study.  
*TRUE.*
- 3) Your introduction should provide as much background information as possible, including a mini-review of the literature on your subject.  
*FALSE. Provide only the information that is strictly necessary to explain why your study was necessary.*
- 4) The methods section talks about what YOU did, so you should never cite other authors.  
*FALSE. Sometimes it is useful to cite other papers rather than going into details about specific procedures.*
- 5) The experimental design of the study must be clearly explained in the methods section.  
*TRUE. Readers need to understand the experimental design as early as possible.*
- 6) It is always strictly necessary to use the same subsections in both the methods and results.  
*FALSE. It is often a good idea to organize your text this way, but the important thing is to organize the information so that readers can easily appreciate which results came from which methods.*
- 7) Always provide full details about manufacturers and suppliers of equipment and materials.  
*FALSE. Use common sense; this information is useful only when it could possibly affect your results.*
- 8) The text of the results section should highlight information from tables and figures that is directly related to the objectives of your study.  
*TRUE.*
- 9) You should never mention results that are not directly related to the objectives of your study, no matter how interesting they may seem.  
*FALSE. Unexpected but interesting results not directly related to your stated objectives can and should be mentioned.*
- 10) Always use the same terms for key concepts in the methods and results sections.  
*TRUE.*
- 11) The order of the columns and rows of a table are not important.  
*FALSE. As in the rest of your document, you must strive to present information in tables and figures in a way that makes it as easy as possible for readers to get your message.*
- 12) A thorough discussion should mention most studies that are related to yours in any way.  
*FALSE. Mention only studies that are relevant to the interpretation of your results.*

- 13) The discussion should never deal with “interesting” results of your study that are not directly related to your objectives.  
*FALSE. You can and should discuss truly interesting findings, even when they are not directly related to your objectives.*
- 14) You should be sure not to omit discussing any of your results in the discussion section.  
*FALSE. Discuss only relevant and interesting results. Note, however, that this does not mean that you can leave out results that displease you.*
- 15) Always end your discussion with some kind of conclusion.  
*TRUE, unless of course it is followed by a conclusions section.*

## EXERCISE 2

- 6) Acute respiratory distress syndrome (ARDS) is defined as the rapid onset of hypoxia ( $\text{Pa}/\text{FiO}_2$  ratio  $\leq 300$ ) and bilateral infiltrates in the absence of left atrial hypertension.
- 1) More than 30% of ARDS patients die before discharge.
- 7) Patients undergoing cardiac, thoracic, vascular, or trauma surgery have increased risk of developing postoperative ARDS.
- 4) The risk factors for postoperative ARDS in patients undergoing other types of surgery are not well defined.
- 2) Moreover, the influence of ventilator and fluid management on whether ARDS develops is unknown.
- 5) We aimed to determine preoperative risk factors for ARDS in patients undergoing surgery other than cardiac, thoracic, vascular, or trauma surgery and to define the role of ventilator and fluid management in the development of postoperative ARDS.
- 3) We hypothesized that patients with known risk factors for end-organ dysfunction receiving large volume resuscitation and nonprotective ventilator management would be more likely to develop postoperative ARDS.

## EXERCISE 3

- 2) We reviewed the medical histories of 150 consecutive patients admitted to our stroke unit between January 1, 2005 and December 31, 2005.
- 7) Criteria for admission to the unit were noncomatose patients with cerebrovascular event suggested by clinical presentation and confirmed by neuroimaging with onset  $< 48$  h who had no concomitant disease or disabling disorders that would limit their ability to undergo rehabilitation.
- 8) We excluded patients with intracranial bleeding.
- 4) All patients underwent EKG and 80% also underwent Holter monitoring.
- 1) We selected cases in which new-onset atrial fibrillation was detected at EKG or Holter monitoring.
- 6) We recorded the time from admission to Holter placement and the number of EKGs obtained within three days of admission.
- 3) We also recorded the time from admission to detection of atrial fibrillation.
- 9) We used Fisher's exact test to analyze the EKG data and the McNemar test to analyze EKG and Holter data in patients who were monitored with both techniques.
- 5) SPSS (v.10.2) was used for all statistical analyses.



**EXERCISE 4**

- 1) This report represents one of the largest single-institution series of patients with breast papilloma. *Discussion.*
- 2) To evaluate agreement between methods, we used the Wilcoxon signed-rank test, Spearman correlation, and Bland-Altman analysis. *Methods.*
- 3) We sought to test whether ischemic lesion size on CT angiography depends on the CT angiography acquisition protocol. *Introduction.*
- 4) Currently there are no objective clinical tools that can accurately discriminate aggressive from indolent prostate cancer. *Introduction.*
- 5) To find the best parameter for channel design, we designed three channels of different heights: 10  $\mu\text{m}$ , 50  $\mu\text{m}$  and 100  $\mu\text{m}$ . *Methods.*
- 6) Semen analysis was performed according to published guidelines of the World Health Organization.<sup>6</sup> *Methods.*
- 7) Further studies are required to elucidate the nature of a higher degree of polyunsaturation in the NMR-visible lipid pool upon eLDL loading. *Discussion.*
- 8) After 4 weeks, plasma HDL-C in the SUB885C group was 39% higher than in the controls ( $1.1 \pm 0.3$  mmol/L versus  $0.8 \pm 0.3$  mmol/L,  $p < 0.05$ ). *Results.*
- 9) TLX has been proposed to function primarily as a transcriptional repressor of target genes through its physical interactions with transcriptional corepressors including epigenetic modifiers like lysine-specific histone demethylase 1 (LSD1).<sup>12-15</sup> *Introduction.*
- 10) Our findings corroborate reports that aprotinin administration increases the risk of postoperative AKI.<sup>1,3, 13-15</sup> *Discussion.*

## 2. Scientific style

### 2.1 Principles

#### EXERCISE 5

*The following answers are orientative: correct answers can vary widely.*

**I. Be specific—don't make readers guess important details.**

- 1) We forced 20 male Sprague Dawley rats to inhale 1500 ppm chloromethane for 90 days.
- 2) Cardiac output decreased by 40%.
- 3) After (During?) the administration of amiodarone... *Or, depending on the context:* Ten minutes after the intravenous administration of 150 mg amiodarone, the frequency and length of runs of tachycardia decreased.
- 4) A 73-year-old man presented with a systolic ejection murmur.

**II. Keep writing as simple as possible—avoid unnecessary complexity.**

- 1) Most patients had had traffic accidents.
- 2) The incidence of type II diabetes in children is increasing.
- 3) We studied 16 men and 14 women with congestive heart failure.
- 4) The nursing team monitored patients' vital signs.

**III. Be concise—make every word count.**

- 1) CT revealed massive subarachnoid hemorrhage.
- 2) Bilirubin causes the urine to become dark brown.
- 3) The purpose of the Rapid Response Team is to support personnel outside the ICU and ED.
- 4) Two studies are underway to explore this phenomenon.

**IV. Ensure that ideas flow smoothly—eliminate obstacles to comprehension.**

- 1) Neurocognitive impairment is common in ICU patients. This impairment can persist long after discharge and can affect patients' ability to perform tasks of daily living, resulting in decreased quality of life and increased social costs.
- 2) At our center, hemopexin levels are often utilized to diagnose hemolytic anemia. *Or:* At our centre, haemopexin levels are often utilised to diagnose haemolytic anaemia.
- 3) When heart rate increases, cardiac output usually increases, too.
- 4) She spoke at the consensus conference to establish regulations to ensure the rights of critical patients.

**V. Maintain the right attitude—be forthright and humble, show respect for others.**

- 1) These results demonstrate an improvement over existing treatment options.
- 2) Our results suggest that this treatment could have some benefit in the treatment of a select group of patients.
- 3) When urologists interpret the PSA, they take many factors into consideration.
- 4) A 20-year-old man presented with a knife wound.

**VI. Be accurate—use the correct terms and mechanics (spelling grammar, and punctuation).**

- 1) In general, medicine you inject acts faster than medicine you swallow.
- 2) Nearly half our patients had heart disease.
- 3) Abused children often corroborate their caretakers' lies.
- 4) Microscopic examination revealed islands of throphoblastic cells surrounded by extensive necrosis.

**EXERCISE 6**

- 1) Fludrocortisone is absorbed rapidly from the GI tract, with *reaching* a peak plasma concentration within 1.5 hours. *This sentence was not specific.*
- 2) Vasopressors are indicated *after starting CPR*. Or: *Administer vasopressors after starting CPR*. *This sentence was unnecessarily complex.*
- 3) The trigeminal nerve is the largest of the cranial nerves; *it* provides the tactile, proprioceptive, and nociceptive afference of the face and mouth. *It also* activates the muscles of mastication, the tensor tympani, tensor veli palatini, mylohyoid, and anterior belly of the digastric. *Inconsistent terminology hindered the flow in this sentence.*
- 4) *Anesthesiologists* must complete a four-year residency program after medical school. Or: *Anaesthetists* must complete a four-year residency *programme* after medical school. *The mixing of UK and US English hindered the flow in this sentence.*
- 5) *This study shows that...* This was a problem of attitude (arrogance).
- 6) A nurse will be responsible for taking your temperature and blood pressure. *He or she* should always inform you of *the* findings. *This was a problem of attitude (sexism).*
- 7) Multiple organ failure *resulted in* death in all cases. *This sentence was not specific.*
- 8) *The overuse of abbreviations hindered the flow in this sentence.*
- 9) *The* lesion *was excised*. *This sentence was unnecessarily complex and wordy.*
- 10) Her gallbladder was resected *by a surgeon*. *This sentence was not concise.*

## 2.2 Clarity

### Precision: Avoiding ambiguity

**EXERCISE 7**

- 1) Patients with Glasgow Coma Scale score <15 were excluded from the analysis.
- 2) A total of 12 (80%) of the 15 samples were contaminated with *Yersinia enterocolitica*.
- 3) Beta-hemolytic streptococci were isolated from blood serum and urine, so clarithromycin was administered.
- 4) We observed a tenfold increase in the T-lymphocytes expressing more Orai1.
- 5) After oral administration of the new angiotensin-converting enzyme inhibitor, mean peripheral blood pressure decreased by 15%.
- 6) The macular skin lesions doubled in size and became purplish-black between the initial examination and follow-up one month later.
- 7) After the procedure, most (74/100) of the rabbits developed edema (45/100) or pneumonia (45/100) or both (16/100).
- 8) We report the case of a six-year-old boy who developed a jejunal perforation after ingesting a toothpick.

- 9) Experimental subjects (*we suppose the authors defined them before*) underwent (*name the tests*) to ensure they were (*perhaps it would be better to define healthy in negative terms, e.g., they did not have X, Y, or Z*).
- 10) Lowering the pH below 6.0 and raising it above 7.7 resulted in the death of (*perhaps it might be interesting to list the microorganisms*).

### EXERCISE 8

- |      |       |
|------|-------|
| 1) d | 6) a  |
| 2) a | 7) d  |
| 3) c | 8) a  |
| 4) c | 9) b  |
| 5) d | 10) c |

### EXERCISE 9

- 1) *irradiated/ radiated*  
The pain **radiated** to his left jaw and arm.  
The prostate and involved lymph nodes were **irradiated**.
- 2) *review/revise*  
Please **review** my paper as soon as possible;  
I need to **revise** it and respond to the reviewers' comments by Friday.
- 3) *implemented/implanted*  
Pacemakers are normally **implanted** under local anesthesia.  
After the protocol was **implemented**, the rate of infections in the ICU decreased by 30%.
- 4) *beside/besides*  
She stood **beside** me through all my troubles.  
**Besides** being obese, he is diabetic.
- 5) *foreword/forward*  
Dr. Joyce wrote the **foreword** to her book on neural control of involuntary effectors.  
I will **forward** your message to the statistical editor.
- 6) *principal/principle*  
In **principle**, an electrical potential is applied across a lipid bilayer membrane and the resulting currents are measured.  
The **principal** cause of dental caries is *S. mutans*.
- 7) *continually/continuously*  
He was fitted with a Holter device to monitor his heart **continuously**.  
We tested the patient's reflexes **continually** over the three-day period.
- 8) *administer/administrate*  
The drug's effects are much more rapid when you **administer** it intravenously.  
The university decided to **administrate** the laboratory directly.
- 10) *noticed/realized*  
She had **noticed** a lump on her breast.  
She **realized** that she needed a professional opinion.

- 11) *localized/ located*  
MRI **located** the lesion in the lumbar spine.  
Topical application of formalin-soaked-pledgets is effective for controlling **localized** bleeding secondary to radiation cystitis.
- 12) *ileum/ilium*  
Osteomyelitis of the **ilium** is uncommon.  
Crohn's disease that affects the **ileum** can increase the risk of gallstones.
- 13) *delayed/postponed*  
The meeting was **postponed** because the surgeon had an emergency call.  
The diagnosis was **delayed** because the medication masked the symptoms.
- 14) *fewer/less*  
We have done **fewer** procedures this month than last.  
We have made **less** money than last month.
- 15) *excise/resect*  
The infiltrative nature of the tumor and its difficult location made it impossible to **excise**.  
If they **resect** one lobe of her liver, she has a good chance of full recovery.
- 16) *patent/permeable*  
The blood-brain barrier becomes more **permeable** during inflammation.  
The common carotid artery was occluded, but the internal and external carotid arteries were **patent**.
- 17) *various/varying*  
**Various** studies have corroborated these results.  
Studies on the efficacy of the treatment have yielded **varying** results.
- 18) *is/represents*  
Obesity **is** a major health problem in many developed countries.  
The dotted line **represents** the mean concentration in the control group over time.
- 19) *absorption/adsorption*  
When calculating the dosage of some drugs in patients undergoing continuous renal replacement therapy, it is important to take **adsorption** onto filters into account.  
Dietary fiber can help bulk up runny stools through **absorption** of excess fluid.
- 20) *reabsorption/resorption*  
In bone **resorption**, osteoclasts break down bone and release the minerals into the blood.  
Vitamin-D-dependent **reabsorption** of calcium takes place in renal distal tubules.

## EXERCISE 10

- 1) a) We found no difference between **the two** groups.  
b) **Both** groups of animals were administered isoflurane anesthesia.  
c) Which of **the two** scales is more accurate?
- 2) a) **While** they were attending the congress, I was reorganizing the laboratory.  
b) Everything changed **while** I was away.  
c) Dr. Johnson responded to the reviewers **whereas** Dr. Sanchez redid the statistical analysis.
- 3) a) Five years after diagnosis, she is free **of** disease.  
b) Reagents for coagulation tests are made **from** rabbits' brains.  
c) These catheters are made **of** BD Vialon™ biomaterial.
- 4) a) Two studies are **underway** to test the safety of the drug in healthy volunteers.  
b) An investigation is **underway** to determine who was responsible for the accident.  
c) There is an **ongoing** discussion about the best way to wean patients from ventilators.

- 5)
  - a) Axoplasmic transport occurs *throughout* the life of a neuron and is essential to its growth and survival.
  - b) Most axonal proteins are synthesized in the cell body of the neuron and are transported *along* axons.
  - c) Microtubules running *along* the length of the axon provide the main cytoskeletal tracks for transport.
- 6)
  - a) Cystatin-6 is likely *involved* in the proliferation of pancreatic cancer.
  - b) These findings *imply* that locally produced estradiol might be protective against Alzheimer's disease.
  - c) Preliminary indications of decreased tissue accumulation *implied* from pharmacokinetic and pharmacodynamic characteristics of isepamicin favor once-daily dosing.
- 7)
  - a) Our *experience* over ten years shows the procedure is feasible and safe.
  - b) After four years of extensive *experiments*, the drug was tested *in vivo*.
  - c) Most patients undergoing chemotherapy for breast cancer *experience* nausea.
- 8)
  - a) Cell cultures were examined on a daily *basis*.
  - b) On the physical examination, dry rales were detected in the *bases* of the lung.
  - c) We could not rule out an underlying connective tissue disorder on the *basis* of the lung pathology alone.
- 9)
  - a) On arrival to the emergency department, the patient appeared perfectly *rational*.
  - b) The pharmacodynamics and pharmacokinetics of mycophenolic acid provide a basis for *ratio-nal* monitoring strategies.
  - c) What is the *rationale* for dosing every 8 hours versus every 24 hours?
- 10)
  - a) The *personnel* at our center are highly qualified.
  - b) Please keep your *personal* opinions to yourself.
  - c) She had a *personal* dispute with one of the laboratory assistants.
- 11)
  - a) Creatinine results from the breakdown of creatine phosphate in muscle and is usually produced at a fairly constant *rate*.
  - b) All the signals were simultaneously recorded by a 12-bit analogical-to-digital converter, sampled at a *frequency* of 200 Hz, and stored on a personal computer.
  - c) Drug action relies on route of administration, *rate* of absorption, and manner of distribution.
- 12)
  - a) Candidates must demonstrate *competence* in statistical analysis.
  - b) Patients' *competence* and the availability of caretakers will be taken into account for decisions about discharge.
  - c) The *competition* for the grant is fierce.
- 13)
  - a) Patients who *have* a central venous catheter must be monitored to detect the growth of bacteria, fungi, or yeasts.
  - b) Arterial injuries at the elbow *carry* a high risk of muscle necrosis.
  - c) Screening can identify unaffected individuals who *carry* a copy of the gene for an autosomal recessive disease.
- 14)
  - a) The foot ulcer had completely *healed* by the six-month follow-up.
  - b) The quest for a *cure* remains elusive.
  - c) Three days' antibiotic treatment is usually sufficient to *cure* a simple bladder infection in women.
- 15)
  - a) The probability of *missing* important findings increases with fatigue.
  - b) Data about the drugs' effects in children are *lacking*.
  - c) Please state explicitly how you handled *missing* data.

- 16) a) Our group has published over 100 articles *since* 2007.  
 b) *Since* you wrote the introduction, you can write the discussion, too.  
 c) *Because* the patient died, she rarely operates. *Because* is better if you want to say that the reason she rarely operates is that this patient died. *Since* is best reserved for cases in which you want to express the idea “from that point in time”, normally with the present perfect tense.
- 17) a) Samples were considered *adequate* when they contained enough material to enable the analyses.  
 b) Metabolic inhibition using lyophilized reagents and reference strains is the most *appropriate* technique for nonspecialized laboratories.  
 c) Washing hands with soap and water provides *adequate* prophylaxis in most cases.
- 18) a) We assessed physicians’ *adherence* to hand-washing protocols.  
 b) The primary inclusion criterion was strict *adherence* to the low-carbohydrate diet.  
 c) An *adhesion* in a joint can restrict movement and cause pain.
- 19) a) We have a protocol to ensure *safety* when moving elderly patients.  
 b) Most biologists who changed fields cited lack of job *security* as a major reason.  
 c) We have taken all necessary precautions to ensure the *security* of our network.
- 20) a) The biologic half-life of methadone *ranges* from 18 to 100 hours.  
 b) Estimates of the prevalence of autism *vary* widely.  
 c) The cost of genetic testing and counseling *varies* with the complexity of the case.
- 21) a) We could not decide *if* we should apply for the grant.  
 b) We could not decide *whether* to apply for the grant.  
 c) We could not reach a decision about *whether* we should apply for the grant.
- 22) a) *Like* Bedford et al.,<sup>34</sup> we found a higher incidence of nephrotoxicity with continuous infusion.  
 b) *As* Bedford et al.<sup>34</sup> reported, the incidence of nephrotoxicity is higher with continuous infusion.  
 c) *As* was reported by Bedford et al.,<sup>34</sup> the incidence of nephrotoxicity is higher with continuous infusion.
- 23) a) *During* the 1990s, a concerted effort was directed at mapping the human genome.  
 b) Scientists from around globe worked on the project together *for* five years.  
 c) *During* this period, many exciting discoveries were made.
- 24) a) The woman *that* taught me how to use bootstrapping works in Barcelona.  
 b) All genetic information is contained in the sequence of the four nucleotides *that* make up DNA.  
 c) Adenine, *which* pairs with thymine in DNA, binds to uracil in RNA.
- 25) a) Student’s t-test or the Wilcoxon rank-sum test was used to compare *continuous* variables.  
 b) Anesthesia was maintained by *continuous* infusion of ketamine and propofol.  
 c) *Continual* administration of low-dose capsules yielded the same benefits as *continuous* infusion.

## EXERCISE 11

- 1) We could go to the fast-food restaurant. There’s no air conditioning and you have to eat standing up, but it’s very ~~comfortable~~ *convenient* because it’s just across the street from the hospital.
- 2) Sterile cloth drapes are easy to ~~manipulate~~ *handle* and resistant.
- 3) I’m sure we can count on the physicians, but I’m not so sure about ~~infirmaries~~ *the nurses (infirmary is a small clinic, e.g., in a school or prison).*
- 4) Autoimmune diseases are a subset of ~~immunomediated~~ *(this word does not exist) immune-mediated* diseases.

- 5) The pleuroesophageal (~~this word does not exist~~) *azygoesophageal* recess is the interface of the subcarinal portion of the mediastinum and the right lower lobe.
- 6) The effectivity *effectiveness* of the treatment has been questioned.
- 7) The specificity of the test ~~vacillates~~ (*vacillate can mean oscillate, but this word means to swing back and forth between two extremes*) *ranges* between 67% and 89%.
- 8) Lymph-node ~~affectation~~ *involvement* at initial diagnosis is this most reliable predictor of poor ~~evolution~~ *outcome*.
- 9) After recanalization, the vessel was ~~permeable~~ *patent*.
- 10) A cell ~~doubles~~ *duplicates* itself when it divides.

## EXERCISE 12

- 1) The patient had a ~~familiar~~ *family* history of high *blood pressure* ~~tension~~.
- 2) The ~~diagnostic~~ *diagnosis* of tendonitis could not be ~~discarded~~ *ruled out* on the simple *plain-film* X-ray.
- 3) A ~~unique~~ *single* malignant fibrous histiocytoma was seen in the posterior part of the left ~~auricle~~ *atrium*.
- 4) The ~~scientific~~ *scientist* ~~rested~~ *stayed* in his office all night ~~revising~~ *reviewing* the literature.
- 5) You can get a copy of my last *latest* book at the library *book store* for €36.
- 6) I'd better not shake your hand—I'm ~~constipated~~ *I have a cold*.
- 7) We performed TRUS biopsy using two ~~preservatives~~ *condoms/sheaths* over the probe.
- 8) Breast MRI is very ~~sensible~~ *sensitive* but not very specific.
- 9) ~~Lobular~~ *Lobar* pneumonia is usually caused by *Streptococcus pneumoniae*.
- 10) We had to call security because ten of her ~~parents~~ *relatives* crowded into the room, ~~molesing~~ *disturbing* the girl in the other bed.

## EXERCISE 13

- 1) ~~Arthrosis~~ *Osteoarthritis* can affect any joint.
- 2) She was eventually diagnosed with ~~ulcerous~~ *ulcerative* colitis.
- 3) It is impossible to detect osteoporosis with ~~osseus gammagraphy~~ *bone scintigraphy*.
- 4) At least 12 *lymph nodes* should be resected to search for potential ~~tumoral affectation~~ *tumor involvement*.
- 5) ~~Helicoidal~~ *Helical* CT scans can detect acute pulmonary *thromboembolism*.  
*Not incorrect, but the most common term in English is simply embolism.*
- 6) Congenital ~~cardiopathies~~ *heart disease* ~~are~~ *is* the most common type of congenital anomaly *birth defect*.  
*Congenital anomaly is not incorrect, but birth defect is much more common in this context.*
- 7) We describe a new technique to study the ~~physiopathology~~ *pathophysiology* of ~~myocardocytes~~ *cardiomyocytes*.
- 8) The ~~hematoencephalic~~ *blood-brain* barrier prevents some chemotherapy drugs from entering the brain.
- 9) There were some suspicious findings on her ~~mammography~~ *mammogram* so we should do an ~~echography exploration~~ *ultrasound examination*.
- 10) My wife was embarrassed *pregnant*—she had an ~~abortion~~ *miscarriage* in the sixth month.



**EXERCISE 14**

- 1) The tumor was ~~a bit~~ **slightly** hyperintense with respect to the liver parenchyma.
- 2) We detected ~~lots of~~ **multiple** metastases in her lungs.
- 3) ~~Anyway~~ **However/Nevertheless**, increased clearance would not explain the enhanced effects of quinidine on repolarization in women.
- 4) We ~~looked into~~ **investigated** the use of immunoassay and high performance liquid chromatography for therapeutic monitoring of vancomycin.
- 5) ~~Plenty of~~ **Many** theories have been proposed to explain these phenomena, but none have **achieved/gained/obtained/received** wide support.
- 6) Although the resolution of fluorescence *in situ* hybridization is ~~pretty~~ **relatively** good, it is limited by the resolution of the microscope used.
- 7) The operation was ~~put off~~ **postponed** because the patient developed respiratory failure.
- 8) After the procedure, she ~~got better fast~~ **recovered quickly**.
- 9) ~~Anyhow, a lot of~~ **However, many** other authors have pointed out flaws in the design of this study.
- 10) It is impossible to ~~get rid of~~ **eliminate** all contaminants in the laboratory.

**EXERCISE 15**

- 1) The lab manager made them ~~the~~ **a** promise that he would help them learn the technique.
- 2) Without a shadow of **a** doubt, Dr. August is the better of the two candidates.
- 3) We lost ~~the~~ respect for her when she lost ~~the~~ control of herself and threw the beaker with the contaminated sample on the ground.
- 4) In **the** short term, there was no significant difference between the two groups; however, in **the** long term, ~~the~~ Group A had better ~~the~~ survival than ~~the~~ Group B.
- 5) The prevalence of diabetes in Spain may be as high as ~~a~~ fourteen percent.
- 6) They did not take ~~an~~ **the** opportunity to present the results at the congress.
- 7) When I was a student, I hated ~~the~~ chemistry.
- 8) He is **a** good man; it was **a** pleasure to do ~~the~~ business with him.
- 9) I was late for ~~the~~ work because I went to ~~a~~ **the** bank.
- 10) She made ~~a~~ **an** effort to finish her review before the deadline.
- 11) She has ~~a~~ **an** MSc in ~~the~~ technical writing.
- 12) Dr. James is in **a** meeting—I'll go and get him.
- 13) A laboratory needs ~~the~~ professionals from many different backgrounds.
- 14) ~~The~~ MRI scanners have revolutionized radiology.
- 15) ~~The~~ breast cancer causes about 40,000 deaths a year in **the** United States.
- 16) ~~The~~ burnout is a major problem in ~~the~~ emergency departments.
- 17) He was interviewed in **the** newspaper, on **the** radio, and on TV.
- 18) I explained how an enzyme is inactivated at ~~a~~ **the** molecular level.
- 19) In ~~the~~ India, ~~the~~ teleradiology is likely to become a billion-dollar industry.
- 20) The university is cutting back on travel expenses for researchers. **Correct as is.**

**EXERCISE 16**

- 1) Analgesics **act** in various ways on the peripheral or central nervous system.
- 2) Bioinformatics **is** among the fastest growing fields today.
- 3) Mumps (epidemic parotitis) **is** a viral disease.
- 4) I'm afraid the news **is** not very encouraging.
- 5) Diabetes **is** more common among overweight people.
- 6) The statistics about teenage pregnancy **are** depressing.
- 7) Molecular cytogenetics **uses** techniques like fluorescence *in situ* hybridization to study specific regions of the genome.
- 8) Transgenics **are** increasingly being used as experimental models in biomedical research.
- 9) The logistics of the experiment **are** extremely complex.
- 10) Our series **is** the largest published before 2000; since then, two larger series **have been** published.
- 11) A number of methods **are** used in our lab.
- 12) A total of 800 mL serous fluid **was** drained from the pleural space.
- 13) A total of 465 patients **were** enrolled at the five centers.
- 14) Shingles **is** caused by the same virus that causes chicken pox.
- 15) Neither the obstetrician nor the midwife **was** able to turn the baby from the breech position to avoid a caesarian.
- 16) Whether the doctor or the nurses **run** the ward is a matter of opinion.
- 17) The acoustics in the auditorium **are** so bad that nobody could understand half of what Dr. Johnson was saying.
- 18) Bioethics **deals** with ethical controversies developing due to advances in biology and medicine.

**EXERCISE 17**

- 1) Dr. Jones [**has**, have] stated three good reasons why we need to redesign the first experiment.
- 2) William and Tim [does, **do**] the preliminary analyses.
- 3) The original tissue or these specimens [was, **were**] contaminated.
- 4) Either her analyses or your summary [**is**, are] full of errors.
- 5) One of her colleagues [**is**, are] going to present the preliminary results of the study.
- 6) Gould et al.<sup>23</sup> [points out, **point out**] several methodological errors in Jensen's study.
- 7) The woman with all the grad students [**works**, work] in my department.
- 8) The residents, as well as the chief, [thinks, **think**] it'd improve their training.
- 9) The article, including all the tables and figures, [**takes**, take] about three hours to read.
- 10) Either approach [**yields**, yield] valid results.
- 11) Either Dr. Leavitt or Dr. Darnell [**is**, are] going to be listed as the first author.
- 12) Every one of those articles [**was**, were] published before Martin et al.'s landmark study.
- 13) Nobody [know, **knows**] whether this approach would be cost effective.
- 14) [**Is**, Are] the news good or bad?
- 15) Her goggles [was, **were**] splattered with blood.
- 16) [Has, **Have**] the forceps been sterilized?

- 17) That pair of pajama pants [*is*, are] threadbare.
- 18) The statistics [is, *are*] promising: it looks like we are onto something.
- 19) Statistics [*is*, are] one of the most important analytical tools we have.
- 20) The Ethics Committee [*has*, have] waived the requirement for informed consent.
- 21) The committee [expresses, *express*] diverse opinions in private.  
*Although to many, especially North Americans, this would sound much better if we wrote The members of the committee...*
- 22) The chief, together with her assistant, [*welcomes*, welcome] the new residents.
- 23) All of the samples, even the spoiled one, [is, *are*] in the freezer.
- 24) A hundred euros [*is*, are] the price of a kit that can do 4,000 colormetric microplate assays.
- 25) There [was, *were*] seven candidates for the position. Now there [*is*, are] only one left!

### EXERCISE 18

- 1) A stent was placed in the left intraventricular *foramen*.
- 2) Infective episodes included three aplastic *crises* due to parvovirus.
- 3) Both bronchi were widened and scarred. *Correct as is.*
- 4) Please include any acknowledgments, references, figure legends, tables, and *appendices* in the main document after the body of the text.
- 5) Three emboli were removed by aspiration. *Correct as is.*
- 6) Most *viruses* are too small to be seen with an optical microscope.
- 7) We report seven new *loci* for genes involved in age-related macular degeneration.
- 8) Note how the parietal pleura and the visceral pleura connect at the hila of the left lung. *Correct as is.*
- 9) The only exclusion *criterion* was hypertension.
- 10) The *vasculitides* are inflammatory diseases of the walls of blood vessels.
- 11) Staphylococci *are* Gram-Positive bacteria that *divide* along multiple axes, resulting in grape-like clusters.
- 12) Gadolinium-based contrast *media* should not be used in patients with severe renal failure.
- 13) *Bullae* are fluid-filled sacs under a thin layer of skin that measure at least 1 cm in diameter.
- 14) We obtained gravimetric readings from absorbent pads placed in both *axillae*.
- 15) Multiple stenoses were found in 34% of the patients. *Correct as is.*
- 16) The *alveoli* are the terminal ends of the respiratory tree.
- 17) In the gastrointestinal tract, stomata are created in esophagus, stomach, small bowel, or large bowel. *Correct as is.*
- 18) Does apoptosis contribute to disease progression in heart failure or is it a *phenomenon* observed only in end-stage heart failure?
- 19) *Petechiae* on the soft palate are associated with streptococcal pharyngitis.
- 20) The cultured cells are seeded onto exogenous extracellular matrices that are made from biocompatible and biodegradable polymers. *Correct as is.*
- 21) About 15% of cells have at least two *nuclei*.
- 22) *Ganglia* are bundles of somata and dendrites that act as relay points between different neurological structures.

- 23) There were multiple *metastases* in the brain.
- 24) The spleen and the liver are abdominal *viscera*.
- 25) Two *fungi* are responsible for most cases of athlete's foot.

### EXERCISE 19

- 1) Oxygenated blood returns *to* the heart through the pulmonary veins.
- 2) Insulin is released *into* the blood.
- 3) Neurotransmitters are stored *in* the synaptic bouton and are released *into* the synaptic cleft.
- 4) The patient is placed *on/onto* the table in the prone position.
- 5) When bacterial biofilm forms *on* the surface of a medical implant, even high doses of antibiotics cannot remove it completely.
- 6) The right marginal vein courses *along* the right cardiac border and may drain *into* the right atrium.
- 7) Microvilli are fingerlike projections seen *on* the surface of some cells.
- 8) B cells develop immunocompetence *in* the bone marrow.
- 9) The sample is pipetted *onto* the slide.
- 10) To ensure an optimal signal, place the sensors *on/onto* an area of the skull with few muscle fibers.
- 11) We went *to* the national congress.
- 12) The catheter is inserted *in/into* the femoral artery.
- 13) Infection developed after a surgical sponge was accidentally left *in* her abdomen.
- 14) Dr. Karper's team is advancing *toward* an understanding the pathways involved.
- 15) Vega and colleagues reported a trend *toward* reduced LDL-receptor-mediated clearance of LDL.
- 16) An HMG CoA reductase inhibitor can lower the plasma cholesterol concentration *to* or near acceptable levels.
- 17) The patient went *into* an irreversible coma.
- 18) The cardiology resident noticed an abnormality *in* the EKG.
- 19) The spermatozoa swam *toward* the ovary extracts, even though they were extremely diluted.
- 20) Two substrate molecules attach *to* the active site of the enzyme.

### EXERCISE 20

- 1) Tight junctions *between* endothelial cells of the blood-brain barrier restrict paracellular diffusion of water-soluble substances from blood *in* the peripheral circulation to tissues *in/inside* the central nervous system.
- 2) The cytoskeleton provides a track-like system that directs the movement of organelles and other substances *within/inside* cells.
- 3) The endoplasmic reticulum transports molecules created by the cell to their specific destinations either *inside* or *outside* the cell.
- 4) It is essential to look *at* the heart when viewing frontal X-rays because some abnormalities are often located solely or partially *in* the retrocardiac region.
- 5) Lesions were classified as suprasellar when located *above* the sella turcica and as infrasellar when located *below* this structure.
- 6) A bicarbonate-rich acid-impermeable mucus secreted by the cells of the surface epithelium forms a

thin layer **over** the entire gastric mucosa.

- 7) In sublingual administration, drugs diffuse into the blood through tissues **under** the tongue.
- 8) In the prophase of mitosis, the centrioles position themselves **next to** one another at **opposite** ends of the cell.
- 9) The liver lies in the abdominal cavity, **next to/close to** the stomach.
- 10) Ribosomes are tiny organelles that can be found **in/inside** the cytoplasm or **on** the surface of the rough endoplasmic reticulum.

## EXERCISE 21

- 1) T cells were discovered **in** the 1970s.
- 2) Dr. Bern reported the preliminary results at the European Congress two years **ago**.
- 3) We included all consecutive patients admitted to the ICU **between** January 1, 2011 and December 31, 2012.
- 4) A total of 16 adverse events were recorded **during** the study period.
- 5) The solution was heated **until** homogeneous.
- 6) The effects of carisoprodol begin **within** 30 minutes of oral administration and last **for** four to six hours.
- 7) The two oligonucleotides were first incubated with RPA (30 nm) **for** 5 min in DNA annealing buffer supplemented with 1 mM ATP.
- 8) The parent compound, cisplatin, is excreted in the urine and accounts for 13% to 17% of the dose excreted **within** one hour **after** administration of 50 mg/m<sup>2</sup>.
- 9) All variables were recorded again **at** the end of the observation period.
- 10) **In** 1981, a new glucocorticoid receptor antagonist known as RU 38486 was synthesized.
- 11) **During/In** the fall and winter, men's estrogen levels increased and testosterone production decreased.
- 12) **After** incubation for 5 min, Rad52 (40 nm) and/or Rad59 (80 nm) were added to initiate the reaction.
- 13) All patients provided informed written consent **before** agreeing to participate in the experiment.
- 14) The study was discontinued **on** the fifth day because the preliminary results suggested that the risks outweighed the benefits.
- 15) A greater proportion of adverse events occurred **at** night than **in/during** the day.
- 16) All patients who have not died or relapsed **by** the end of the follow-up period will be considered disease-free.
- 17) She was in a coma **from** April 3 **to** June 19.
- 18) The FDA approved the new drug application **on** May 4, 2011.
- 19) More than 25 million people have died of AIDS **since** it was discovered **in** 1981.
- 20) **On** Saturdays, Sundays, and holidays, the department is staffed by residents and an attending physician is on call at home.

## EXERCISE 22

- 1) The PET/CT scanner is located **in** another building.
- 2) The pharmacology department is **on** the sixth floor.
- 3) Dr. Paul is **in** the operating room.

- 4) We didn't plan to spend a long time **at** the seminar.
- 5) Tell them to wait for me **at** the entrance to the ICU.
- 6) Do they live **in** the city or **in** the country?
- 7) Dr. Finstadt arrived **at** the electrophysiology suite well in advance.
- 8) The patient was being carried **on** a stretcher.
- 9) After talking **on** the phone for half an hour, I developed a terrible pain **in** my neck!
- 10) **At** that time, I was a grad student, just learning how things worked.
- 11) The use of electronic devices is forbidden **in** some parts of the hospital.
- 12) There were so many fingerprints **on** the screen that we could hardly see the image.
- 13) A fragment of the catheter had broken off and become lodged **in** the left pulmonary artery.
- 14) A nurse will inform you shortly; in the meantime, please wait **in** the waiting room.
- 15) If Dr. Michaels doesn't learn to write better reports, she'll be out **on** the street.
- 16) I use my cell phone when I'm **on** the ward, but never while I'm **in** the operating room.
- 17) Please hurry up! I want to get there **in** time to see the opening lecture.
- 18) She's always very punctual—she's always **on** time.
- 19) The lab is located **on** Seventh Avenue.
- 20) Dr. Thomson works **in** the field of cell biology, while Dr. Fernandez works **in** molecular biology.

### EXERCISE 23

- 1) Dr. Kaiser has returned **to** the university where he did his postdoc.
- 2) We are working **toward** a better understanding of the role of prostaglandins **in** inflammation.
- 3) She was put **onto/on** a stretcher and taken away **in** an ambulance.
- 4) Sensory nerves convert external stimuli **into** internal stimuli.
- 5) My office is **in** the East Wing.
- 6) Advance the catheter **toward** the heart, but stop about 5 cm before you reach it.
- 8) Take any bus that heads **toward** the university.
- 9) Are the department chiefs still **in** the meeting?
- 10) "Please hang **on**. Dr. Browning is **on** another line right now."
- 11) Dendrites carry impulses **toward** the body of a neuron.
- 12) Dr. Gould walked **onto** the stage and began his lecture.
- 13) The drunk vomited **in/on** the bed **in** the examination room.
- 14) Dr. Rimini thanked us for listening and told us to carry **on** with our work.
- 15) Are you planning **on** going **to** the session?
- 16) While being transferred **to** a nursing home, the patient fell **to** the floor.
- 17) Dr. Walker got **in** trouble over his comments **to** the resident.
- 18) The term ascites refers **to** fluid **in** the peritoneal cavity.
- 19) I'll take you **to/into** the conference center.
- 20) She left her goggles **on** the counter.

**EXERCISE 24**

- 1) Diuretics can interfere **with** calcium absorption.
- 2) We analyzed the factors associated with failure to adhere **to** the regimen.
- 3) Women diagnosed with osteoporosis were invited to participate **in** the study.
- 4) One shortcoming of our study is we had to rely **on** patients' self reports.
- 5) In most cases, cholangiography cannot distinguish recurrent primary sclerosing cholangitis **from** other conditions.
- 6) In most cases, cholangiography cannot distinguish **between** recurrent primary sclerosing cholangitis and other conditions.
- 7) Monoclonal antibodies excel **at/in** the identification of antigens because cross-reacting antibodies are absent.
- 8) A 52-year-old man complained **of** a severe precordial crushing sensation with pain radiating to the left shoulder.
- 9) Compared to intensive care physicians, nurses were more likely to comply **with** hand-washing recommendations.
- 10) All the reviews commented **on** the small sample.
- 11) The right and left coronary arteries arise **from** the aorta.
- 12) The critical care team responded **to** the code.
- 13) The vascular wall consists **of** several layers (tunica adventia, tunica media, and tunica intima).
- 14) The patient refused to consent **to** a blood transfusion.
- 15) This is an emergency that calls **for** immediate surgical intervention.
- 16) It can take up to a month to fully recover **from** shingles.
- 17) Common normal anatomic variants can easily be mistaken **for** pathology on plain-film X-rays.
- 18) The patient will have to choose **between** a metallic valve and a biologic valve.
- 19) The treatment will depend **on** the patient's underlying condition and comorbidities.
- 20) Systemic risk factors may also contribute **to** treatment failure.

**EXERCISE 25**

- 1) The tablet is coated **with** a pH-sensitive acrylic polymer so the drug is released in the distal ileum and colon.
- 2) All the *Streptococcus pneumoniae* isolates in this study were sensitive **to** cefixime.
- 3) All patients aged 18 years or older were eligible **for** the study.
- 4) The findings were consistent **with** chronic traumatic encephalopathy.
- 5) A low red blood count is characteristic **of** anemia.
- 6) Clinicians need to be familiar **with** these signs.
- 7) One Howell unit of heparin is approximately equivalent **to** 0.002 mg of pure heparin.
- 8) Patients with AIDS are susceptible **to** opportunistic infections.
- 9) The attending physician is legally responsible **for** the patient's care.
- 10) This peptide activates smooth muscle via a mechanism similar **to** ERK-mediated phosphorylation.
- 11) Reticulocyte RNA and functional minigene splicing assays in heterologous cells revealed that this mutation was associated **with** a complex pattern of aberrant splicing.

- 12) One month after the intervention, only 3% of patients were dissatisfied *with* the outcome.
- 13) Rats in the control group were exposed *to* filtered room air.
- 14) This experiment was based *on* earlier experiments reported elsewhere.
- 15) The statistics used were not suitable *for* the type of data analyzed.

### EXERCISE 26

- 1) Vitamin supplements are no substitute *for* a balanced diet.
- 2) The main advantage *of* endovascular repair was a lower rate of perioperative complications.
- 3) The reason *for* readmission was not noted in half of the patients.
- 4) None of the patients had adverse reactions *to* the drug.
- 5) There is a need *for* further studies with more patients.
- 6) Patients with valvular defects should be administered antibiotics as prophylaxis *against/for* endocarditis.
- 7) Myxedema can develop due to long-term hypothyroidism as a result *of* untreated Hashimoto's disease.
- 8) Major surgery results in period of cell-mediated immunosuppression that can have a negative impact *on* the patient's recovery.
- 9) This sharp decrease *in* streptomycin production was accompanied by a decrease *in* intracellular accumulation *of* ppGpp.
- 10) It is essential to understand the difference *between* cell-mediated and humoral immunity.

### EXERCISE 27

- 1) She was diagnosed *of* *with* pericarditis and was admitted in the hospital.
- 2) The treatment consisted *in* *of* daily wound care and watchful waiting.
- 3) The choice of antibiotic depends *of* *on* which organism is causing the infection.
- 4) We aimed to determine the frequency, sites, and patterns of atypical metastases *of* *from* prostate cancer.
- 5) If the pain worsens, substitute paracetamol *for* *with* tramadol.
- 6) Divide the work up *between* *among* all the residents.
- 7) We describe a technique for detecting cancer cells based *in* *on* the interaction between a chemotherapy agent and cell membrane components.
- 8) At the six-month follow-up, all patients of the treatment group showed a significant decrease *of* *in* total serum cholesterol.
- 9) We suspect the source of bleeding is a severed artery—please call *to* the vascular surgeon.
- 10) The abdominal CT revealed a foreign body *into* *in* the jejunum.

### EXERCISE 28

- 1) Dr. Patricia McLean, *whose* husband pioneered the procedure, is probably the best choice.
- 2) She consulted a cardiologist, *who* ordered a stress test.
- 3) If you need advice on microarray techniques, the person *who/that\** you need to contact is Dr. Susan Lopez.
- 4) Professor Weiner, *whose* achievements include the Founders' Award, will be giving the keynote address.



- 5) This book was written by the geneticist *who/that* spoke at the conference in Madrid.
- 6) The osteoid osteoma was located in the epiphysis, *which* is extremely rare.
- 7) You cannot perform the procedure *that\** we did without CT fluoroscopy.
- 8) She was transferred to this ICU, *where* she developed multiple organ failure.
- 9) What's the name of the instrument *that/which\** you used to examine the eardrum?
- 10) The room *where* the procedure is done must have excellent lighting.

### EXERCISE 29

- 1) Dr. Safier, who works at the Mayo Clinic, was my roommate at college. *Non-defining clause (provides non-essential, parenthetical information between commas).*
- 2) We need to arrange a blood transfusion for the patient who was just operated on. *Defining relative clause providing information essential to the meaning of the sentence—written without commas.*
- 3) The nurse, who had more experience than the resident, was able to avert a disaster. *Non-defining clause (provides non-essential, parenthetical information between commas).*
- 4) *Here there are two possibilities:* a) The fellows who understand English well enjoyed the talk. *Some of the fellows understand English well and only these ones enjoyed the talk.* b) The fellows, who understand English well, enjoyed the talk. *In this case, all the fellows understand English and they all enjoyed the talk.*
- 5) The renovation of the wet lab, which was announced yesterday, will help keep our center on the cutting edge of science. *Non-defining clause (provides non-essential, parenthetical information between commas).*
- 6) *Here there are two possibilities:* a) The lab manager who is from India can be very difficult to understand. *There is more than one lab manager, and the one from India can be difficult to understand.* The lab manager, who is from India, can be very difficult to understand. *In this case, there is only one lab manager.*
- 7) We're looking for a biologist who is willing to get her hands dirty. *Defining relative clause providing information essential to the meaning of the sentence—written without commas.*
- 8) The stratum corneum, which is the outermost layer of the epidermis, consists of dead cells that lack nuclei and organelles. *Non-defining clause (provides non-essential, parenthetical information between commas).*
- 9) They have done this procedure dozens of times before, which is no guarantee that they will succeed this time. *The relative pronoun "which" refers to the whole idea expressed in the main clause and adds extra, non-essential information.*
- 10) The urologist who is going to operate on my prostate is very good. *Defining relative clause providing information essential to the meaning of the sentence—written without commas.*

### EXERCISE 30

- 1) I determined the viral load using *only* branched DNA in the university lab yesterday.
- 2) To compensate for inflation, we asked them to review our project funding *yearly*.
- 3) The lab manager asked them to *strictly* register the material they used.
- 4) I *nearly* died when the contaminated specimen spilled on the counter.
- 5) In patients with diabetes, poor peripheral circulation can *further* increase the risk of infection.

**EXERCISE 31**

- 1) *After denaturing* at 95°C, we use a primer-specific annealing temperature of 54°C.
- 2) Moving from a square detection region to a tapered detection *region improved* the signal by a factor of 2 and the SNR from 6.4 to 9.6.
- 3) *Seen* through the microscope, the drop of water seemed to come alive.
- 4) *Hoping for a grant*, she sent the proposal to the director of the agency.
- 5) Rehearsing his talk on the flight to the congress, *he realized it was unlikely that he could give* a successful speech.
- 6) We resected a section of the small *bowel obstructed by adhesions* and created an anastomosis.
- 7) *You could see the broken radius and ulna protruding through the skin of her left forearm*.
- 8) After listening to her explanation, *we could make sense of* the results.
- 9) Inserting the distal tip of the chronic hemodialysis catheter too far into the atrium *caused the patient to develop* an arrhythmia.
- 10) *Because they failed to record essential variables*, the analysis was deeply flawed.
- 11) Uncontrollable bleeding is both the most common and the most dangerous *complication*.
- 12) Considering the consequences, *we should have avoided* intramuscular injection in the anticoagulated patient.
- 13) Patients report greater satisfaction *when sedated for colonoscopy*.
- 14) The surgeon checked *the knife wound victim* for internal injuries.
- 15) *After I explained* the possible benefits and risks involved, the patient signed the informed consent form.

**EXERCISE 32**

- 1) Fellows who seek their tutors' advice can *often* improve their evaluation (*i.e., have a good chance of improving their evaluation*). Fellows who *often* seek their tutors' advice can improve their evaluation (*i.e., it is the frequency of advice seeking that is important*).
- 2) To carry out a successful research project, you must administer your funds carefully.
- 3) She likes to listen to classical music while analyzing the data.
- 4) The undergraduates were delighted by the rats breeding freely in the cages.
- 5) Dr. Joseph needs to do *really* well on his board examination (*i.e., he needs a very good score on the exam*). Dr. Joseph *really* needs to do well on his board examination (*i.e., it is very important for him to do well on the exam*).
- 6) An ameba that moved all over the place appeared on the slide.
- 7) The results seemed to make more sense after we started checking her blood pressure every 30 minutes.
- 8) After reading her book, they decided her talk is worth going to.
- 9) She gave the fellows the cultures on lidded Petri dishes.
- 10) He had to repeat the course because he *nearly* failed every exam (*i.e., he barely passed every exam*). He had to repeat the course because he failed *nearly* every exam (*i.e., he only passed one or two exams*).

**EXERCISE 33**

- 1) Xavier plans *to apply* for a grant next month.
- 2) She dislikes *doing* colonoscopies—she says her wrist hurts afterward.
- 3) The medical students practiced *taking* medical histories.
- 4) Dr. Walker enjoys *drinking* whisky when he goes to congresses.
- 5) They hope *to obtain* a government grant to continue their research.
- 6) If Dr. Comas keeps on *working* so hard, she's going to get burned out.
- 7) He asked *to have* the morning off to answer the reviewers.
- 8) Do you mind *helping* her with the statistical analysis?
- 9) Dr. Gould promised *to hire* him for the summer.
- 10) Dr. Hill suggested *doing* an MRI to stage the tumor.
- 11) They agreed *to write* a recommendation for me.
- 12) She never mentioned *working* in Boston. How long was she there?
- 13) Dr. Stapleton decided *to take* her children with her to the seminar.
- 14) Geraldine offered *to build* the database for me.
- 15) The endocrinologists want *to set up* a diabetic foot clinic.
- 16) Where did you learn *to write* like that?
- 17) Dr. Whitbread appears *to be* the best person for the position.
- 18) Dr. Williams chose *to accept* the fellowship in Cambridge.
- 19) I distinctly remember *telling* him to lock the lab before leaving.
- 20) He claims *to be* an expert in biocomputing, but I don't believe him.

**EXERCISE 34**

- 1) Remember *to check* / ~~checking~~ on the cultures after lunch.
- 2) Lillian, I'm afraid I have some bad news—I regret *to tell* / ~~telling~~ you that we have hired someone else.
- 3) We tried ~~to use~~ / *using* different techniques, but none of them worked.
- 4) She can't go on ~~to work~~ / *working* without a contract; we must find a solution.
- 5) He stopped ~~to drive~~ / *driving* after his stroke.
- 6) Amy went on ~~to work~~ / *working* even after her grant money dried up.
- 7) Stephen went on *to win* / ~~winning~~ the Nobel Prize a few years later.
- 8) I regret not ~~to finish~~ / *finishing* my review in time.
- 9) I don't remember ~~to do~~ / *doing* the test, and I didn't record it in the lab log.
- 10) They tried *to resuscitate* / ~~resuscitating~~ the accident victim, but he died.

**EXERCISE 35**

- 1) What happened at the meeting this morning?
- 2) A second molecular biology laboratory is being constructed.
- 3) The operation has permitted her to lose 50 kg.
- 4) It is essential to remember to enter the data in the database after each step.
- 5) They tried giving her noninvasive mechanical ventilation, but her condition did not improve.
- 6) Only three patients refused to participate in the study.

- 7) The decrease failed to reach statistical significance.
- 8) The patient was sedated so he forgets undergoing the test.
- 9) We regret to inform you that we cannot publish your article.
- 10) Dr. Severin had her hair cut before her presentation at the American Congress.

**EXERCISE 36**

- |      |       |
|------|-------|
| 1) a | 6) b  |
| 2) a | 7) c  |
| 3) b | 8) c  |
| 4) a | 9) a  |
| 5) c | 10) b |

**EXERCISE 37**

- 1) a) "right iliac fossa" yields 812,000 results in Google (G)//23,200 in Google Scholar (GS)  
 b) *"right lower quadrant" yields 2,800,000 results in Google (G)//32,000 in Google Scholar (GS)*  
 c) "lower right quadrant" yields 1,650,000 in Google (G)//21,700 in Google Scholar (GS)
- 2) a) exterior superior quadrant G: 1//GS: none  
 b) superior exterior quadrant G: 7//GS: 2  
 c) outer upper quadrant G: 56,300//GS: 364  
 d) *upper outer quadrant G: 653,000//GS: 8,930*
- 3) a) inflammatory pelvic disease G: 4,750//GS: 372  
 b) *pelvic inflammatory disease G: 1,660,000//GS: 51,900*  
 c) inflammatory disease of the pelvis G: 6,750,000//GS: 63
- 4) a) radioisotope scanning G: 32,500//GS: 8,760  
 b) radionuclide scanning G: 37,400//GS: 6,750  
 c) *scintigraphy G: 1,260,000//GS: 321,000*  
 d) gammagraphy G: 20,200 (but look at the sources!)//GS: 1,950
- 5) a) renal insufficiency G: 1,530,000//GS: 403,000  
 b) kidney insufficiency G: 75,600//GS: 5,180  
 c) *renal failure G: 7,260,000//GS: 1,140,000*  
 d) kidney failure G: 5,200,000//GS: 126,000
- 6) *antibiotic prophylaxis for* G: 2,360,000//GS: 15,900 vs. antibiotic prophylaxis against G: 672,000//GS: 1,730
- 7) a) heart diseases G: 3,880,000//GS: 229,000  
 b) *heart disease G: 40,100,000//GS: 1,990,000*  
 c) cardiopathies G: 349,000//GS: 16,000 (most in French)  
 d) cardiopathy G: 3,570,000//GS: 21,700
- 8) *invasive ductal carcinoma G: 336,000//GS: 29,000*, infiltrative ductal carcinoma G: 46,500//GS: 973, infiltrating ductal carcinoma G: 105,000//GS: 13,600
- 9) epiploic torsion G: 177//GS: 17, *omental torsion G: 10,000//GS: 773*, or *torsion of the omentum G: 79,000//GS: 609*
- 10) a) *multicenter prospective cohort study G: 502,000//GS: 2,410*, prospective multicenter cohort study G: 235,000//GS: 2150, prospective cohort multicenter study G: 58,000//GS: 46

- b) *prospective observational case-control study* G: 679,000//GS: 148, observational prospective case-control study G: 202,000//GS: 56, prospective case-control observational study G: 27,400//GS: 26, observational case-control prospective study G: 3//G: 1
- 11) *valve regurgitation* G: 297,000//GS: 28,500, valvular regurgitation G: 90,300//GS: 16,700, *valve insufficiency* G: 251,000//GS: 27,900, valvular insufficiency G: 52,800//GS: 9,470
- 12) computer tomography G: 684,000//GS: 86,900, computerized tomography G: 1,030,000//GS: 392,000, *computed tomography* G: 7,640,000//GS: 1,450,000, computer axial tomography G: 23,600//GS: 1,180, computerized axial tomography G: 282,000//GS: 29,000, computed axial tomography G: 120,000//GS: 10,300
- 13) noncontrast CT G: 43,000//GS: 8,300, *unenhanced CT* G: 63,900//GS: 12,800, nonenhanced CT G: 15,000//GS: 3,130, precontrast CT G: 27,200//GS: 1,760
- 14) *one in four* G: 9,480,000//GS: 93,800, one of four G: 177,000,000//GS: 656,000 (but the main meaning is to specify, not to say the proportion), one out of four G: 8,750,000//GS: 35,400
- 15) lateral sulcus G: 59,300//GS: 6,690, lateral fissure G: 29,700//GS: 3,380, *Sylvian fissure* G: 119,000//GS: 23,900, Sylvian sulcus G: 4,80//GS: 968, lateral fissure of Sylvius G: 42,500//GS: 46

### EXERCISE 38

- 1) We presented the preliminary results at the national congress and published the final results in an international journal.  
*No commas are necessary: the subject "We" applies to both predicates.*
- 2) Serotonin, which is derived from tryptophan, plays an important role in regulating intestinal movements.  
*Rule 2: Place commas before and after nonessential clauses, phrases, and words.*
- 3) An antigen is a large complex molecule that triggers a specific immune response against itself when it gains entry to the body.  
*Rule 3: Do not place commas before or after essential clauses, phrases, or words.*
- 4) Although they are both named after the same man, Paget's disease of bone and Paget's disease of the nipple are completely unrelated phenomena.  
*Rule 1: Place a comma after an introductory clause, phrase, or word.*
- 5) The radiologist assured us that the lesion was benign and that it was unlikely to cause problems.  
*Rule 3: Do not place commas before or after essential clauses, phrases, or words.*
- 6) Some experiments cannot be done because of a lack of funding.  
*Rule 1: Place a comma after an introductory clause, phrase, or word that comes before the main clause. Do not place a comma before these elements when they come after the main clause.*
- 7) After the infection was diagnosed and treated, the patient recovered quickly.  
*Rule 1: Place a comma after an introductory clause, phrase, or word.*
- 8) Studies that involve changes to the standard treatment regimen must be approved by the institutional review board.  
*Rule 3: Do not place commas before or after essential clauses, phrases, or words.*
- 9) The cultures revealed Gram-negative, Gram-positive, and fungal microorganisms.  
*Rule 5: In series of three or more words, phrases, or clauses, place commas between the elements.*
- 10) The histological analysis revealed undifferentiated stem cells.  
*No commas are necessary: the adjectives are not coordinated ("undifferentiated" modifies "stem cells").*

- 11) HBx promotes the transcriptional activities of NF- $\kappa$ B, AP-1, and survivin.  
*Rule 5: In series of three or more words, phrases, or clauses, place commas between the elements.*
- 12) Vitamin D3 plays a role in the induction of host defense peptides in human ocular barrier epithelial cells.  
*No commas are necessary: the adjectives are not coordinated ("human" modifies "ocular barrier epithelial cells", "ocular" modifies "barrier epithelial cells", and "barrier" modifies "epithelial cells").*
- 13) This conclusion is, in my opinion, not supported by the results.  
*Rule 2: Place commas before and after free-standing clauses, phrases, and words*
- 14) The World Congress will be held in Arlington, Virginia, USA; the deadline for abstract submission is January 8, 2015.  
*Rule 7: Place a comma between elements of geographical names (town or city, state or province, country), between the day and the year in dates, and between names and titles that follow them.*
- 15) Because of their refusal to undergo blood transfusions, some Jehovah's witnesses refuse to go to the hospital.  
*Rule 1: Place a comma after an introductory clause, phrase, or word that comes before the main clause.*
- 16) Physicians who have worked in intensive care units are often the ones who are most sensitive to end-of-life ethical issues.  
*Rule 3: Do not place commas before or after essential clauses, phrases, or words.*
- 17) Fluoroscopy, which was once common in general practitioners' offices, is now restricted to hospital environments.  
*Rule 2: Place commas before and after nonessential clauses, phrases, and words.*
- 18) As chief of the department, she was responsible for hiring and firing staff members.  
*Rule 1: Place a comma after an introductory clause, phrase, or word.*
- 19) He had an ugly, large, brown mole on the tip of his nose.  
*Rule 6: Place a comma between two coordinate adjectives.*
- 20) Dr. Dubner is a paid consultant for GlaxoSmithKline, and Dr. Lee has received lecture fees from Novartis.  
*Rule 4: Place a comma before a coordinating conjunction (and, but, for, or, nor, so, yet) that joins two independent clauses.*

### EXERCISE 39

- 1) When the patient turned\* around, a dozen large welts could be seen on his back.  
*Missing comma after introductory clause ending with turned or after introductory clause ending with around, depending on meaning.*
- 2) Since we got the new scanner, our throughput has nearly doubled.  
*Correct use of comma after introductory clause.*
- 3) Having finished the statistical analysis, we started to write the results.  
*Missing comma after introductory participial phrase ending with analysis.*
- 4) Usually, we do not administer anesthesia in these cases.  
*Correct use of comma after introductory adverb.*
- 5) From the time we started to monitor his heartbeat, we were aware that something unusual was happening.  
*Correct use of comma after a complex prepositional phrase.*

- 6) When he was in medical school, he was only a mediocre student.  
*Missing comma after introductory clause ending with school.*
- 7) Before you decide which approach to use, you should consider the possible complications involved in each and their importance in that particular patient.  
*Correct use of comma after introductory clause.*
- 8) Nevertheless, the secondary analysis found no significant differences.  
*Missing comma after introductory transitional word nevertheless.*

#### EXERCISE 40

- 1) To check the goodness of fit of the model, we used the Kolmogorov-Smirnov test. *Introductory infinitive phrase.*
- 2) Since the study was discontinued prematurely, our sample size is too small to draw valid statistical inferences. *Introductory clause.*
- 3) Of course, we did not start the experiment until the baseline data had been recorded. *Introductory prepositional phrase.*
- 4) The patient was in critical condition when we started the intervention. *Correct: no introductory element.*
- 5) As I mentioned, it may occasionally be necessary to administer a contrast agent. *Introductory clause.*
- 6) Having decided to exclude obese patients *a priori*, we had difficulties recruiting enough diabetic patients within our unit. *Introductory participial phrase.*
- 7) To estimate the costs, we consulted three independent economists. *Introductory infinitive phrase.*
- 8) To survive a suicide attempt is not necessarily desirable. *Correct: no introductory element (the infinitive phrase is the subject of the sentence).*
- 9) Conducting a pilot study helped us to design a more robust trial. *Correct: no introductory element (the gerund phrase is the subject of the sentence).*
- 10) However he tried to extract the fragment, he could not. *Introductory clause (however is not a transitional word here but the first word of an introductory clause).*

#### EXERCISE 41

- 1) Dr. Patterson, *who was recently appointed Chief Resident*, is a born leader.
- 2) Dr. DeLonghi decided, *nonetheless*, to observe the procedure.
- 3) Anyone who enters the operating room must scrub up beforehand.
- 4) The grant that I wanted to get is no longer available.
- 5) The first-year resident Sarah Hansen claimed to be an expert in statistics.  
*However, if Sarah is the ONLY first-year resident, her name could be separated from the rest of the sentence by commas.*
- 6) The surgical resident, *observing the procedure nervously*, did not say a word.  
*However, if more than one resident was present and only one of them was observing nervously and we want to say WHICH ONE DID NOT SAY A WORD, this could be written without commas, although a more natural to express that idea would be The surgical resident that was observing...*
- 7) The surgical resident that was the most nervous of all did not say a word.



- 8) The research project, *which many in the hospital considered to be a waste of money*, eventually increased the institution's funding by over 30%.  
*However, if there were many projects and ONLY ONE was considered a waste of money and we want to say WHICH ONE, this sentence could be written without commas. In that case, using that instead of which would be appropriate, and writing The only research project that... would reinforce this idea.*
- 9) The physical examination, *sometimes the most informative part of the work-up*, is often done hastily.
- 10) The hepatic artery, *which arises from the celiac artery*, supplies oxygenated blood to the liver, pylorus, duodenum, and pancreas.

#### EXERCISE 42

- 1) Our results were, *as a matter of fact*, chiefly interesting for what we did not find. *The phrase as a matter of fact is a nonessential element.*
- 2) The nurse who attended the patient said that he had a temperature of 39 °C. *Correct: the phrase who attended the patient is essential because it tells us which nurse we are talking about.*
- 3) We did not, *however*, intend to repeat the experiment. *The word however is nonessential.*
- 4) Dr. Harmon, *having forgotten to close the door*, was responsible for all the animals escaping. *The phrase having forgotten to close the door is nonessential.*
- 5) Common Gram-positive bacteria *that affect humans* include *Streptococcus*, *Staphylococcus*, *Bacillus*, and *Listeria*. *The phrase which affect humans is essential because it tells us which bacteria we are talking about.*
- 6) The German scientist and physician *Robert Koch* is considered one of the founders of microbiology. *Robert Koch defines which German scientist and physician we are talking about.*
- 7) Paul Ehrlich, who popularized the concept of a "magic bullet", received a Nobel in physiology for his work in immunology. *Correct: the phrase who popularized the concept of a "magic bullet" is nonessential.*
- 8) Dr. Raul's chief, Dr. Ferrer, is president of the national society. *Correct: Dr. Ferrer is already defined by Dr. Raul's chief so it is nonessential.*
- 9) The poster about tight junction proteins *that our residents made* won an award at the European congress. *The phrase that our residents made tells us which poster we are talking about, so it is essential.*
- 10) Our research center, *which was renovated recently*, dates from 1956. *The phrase which was renovated recently is nonessential.*

#### EXERCISE 43

- 1) Dr. Mariachi, *wearing a lead apron*, entered the interventional radiology suite. *The phrase wearing a lead apron is nonessential.*
- 2) The auricles, *located inside the atrium*, are lined with pectinate muscles that form a network of hills and furrows that give it a trabeculated surface. *The phrase located inside the atrium is nonessential.*
- 3) The woman who teaches parasitology at the central campus has published a lot. *Correct: the phrase who teaches parasitology at the central campus is essential: it tells us which woman we are talking about.*
- 4) The high school course that was most valuable to me was word processing. *Correct: the phrase that was most valuable to me is essential: it tells us which course we are talking about.*



- 5) Dr. Harding, *whose thesis dealt with molecular imaging*, explained how the PET scanner worked. *The phrase whose thesis dealt with molecular imaging is nonessential.*
- 6) He rewrote his most famous essay, "*On Science*", nine times. *The phrase his most famous essay already tells us which essay we are talking about.*
- 7) The cardiology resident *who was interested in electrophysiology* decided to apply for a fellowship in our hospital. *Correct as is, if the phrase who was interested in electrophysiology tells us which resident we are talking about; however, if we already know which one we are talking about (e.g., if there is only one or if we have mentioned her before), it would be better to separate this phrase from the rest of the sentence with commas because it provides nonessential information.*
- 8) Two of my colleagues, Mary Beth Edwards and Sean McDowell, are planning to study the anti-inflammatory effects of curcumin. *Correct as is; their names are nonessential. In this case, I want to emphasize the fact that they are my colleagues. If I wanted to emphasize who they were, I could write Mary Beth Edwards and Sean McDowell, two of my colleagues, are... In this case, two of my colleagues is nonessential.*
- 9) The graduate student who made the discovery had been investigating a completely unrelated technique. *Correct as is. The phrase who made the discovery tells us which student we are talking about.*
- 10) Dimitri Medeleev, *the designer of the periodic table of the elements*, never won the Nobel prize. *The phrase the designer of the periodic table of the elements is nonessential. As in number 8, if we wanted to emphasize his achievement, we could write The designer of the periodic table of the elements, Dimitri Medeleev, never won the Nobel Prize.*

#### EXERCISE 44

- 1) Many companies make drug-eluting stents, which are coated with different substances that block cell proliferation; these stents are usually placed by interventional cardiologists.
- 2) Dr. Wainwright worked in the emergency room for many years, and he now runs a trauma center.
- 3) The operation was a success, but the patient, unfortunately, died in the ICU.
- 4) The new scrubs came in a wide variety of colors; it was a welcome change.
- 5) As I was leaving the ICU, I heard an alarm, for the patient had removed his endotracheal tube.
- 6) The endoscopist preferred to sedate her patients; she did not like inflicting discomfort.
- 7) The rats were sedated, intubated, and connected to the monitors; everything was ready for the experiment to begin.
- 8) He looked carefully into the microscope, but he failed to notice the tiny area of tissue with abnormal cells on the periphery of the specimen.
- 9) The specimen had been fixed, but, to his disappointment, nothing else had been done because of the technician's strike.
- 10) The computer could perform millions of operations per second; however, it could not think spontaneously.
- 11) I knew the procedure would be tiring, but I did not know I would have to be on my feet all night.
- 12) The patient, in delirium, rambled on; I was unable to understand what she was trying to say.
- 13) The vascular surgeon repaired the severed artery; subsequently, the wound was closed.
- 14) Spanish biologists are supposed to be well trained, and I have seen plenty of evidence to support that claim since I have been at this center.

- 15) The first three experiments seemed to indicate that there was no relationship between the two variables; however, the last four experiments showed that they were related.
- 16) In the first place, the patient was too ill to transfer; in the second place, we did not have the means to treat her at our hospital.
- 17) I have read the article in *Circulation*, but I have not read the article in *Stroke*.
- 18) Immunology is my favorite subject; in fact, I plan to do a Master's degree in it next year.
- 19) The radiologist made a brilliant diagnosis, and the surgeon did not need to perform exploratory laparotomy.
- 20) Large hospitals have everything you need; you can find professionals from every specialty under one roof.
- 21) Dr. Ronstadt and Dr. Farell were both in the session this morning; they gave an interesting presentation on their research.
- 22) The complications are not serious, but they are numerous and annoying.
- 23) Writing lab reports is excellent practice; I write several every week.
- 24) I am not interested in going to the European congress this year; however, I would like to go to the American congress.
- 25) Not all successful scientists are good communicators, but many good communicators are successful scientists.
- 26) Dr. Jackson spent the money on editing her text; at least, that was her explanation for the missing funds.
- 27) I have checked the analysis three times, but I cannot find the source of error.
- 28) His work may seem irrelevant, but you would be surprised to see how many authors cite him.
- 29) She realized that something was wrong; she was not, however, the only person who was concerned.
- 30) They had to send their responses to the reviewers by Friday; otherwise, they would have had to submit the article as a new submission.
- 31) I finished reviewing the article, and then I went to bed.
- 32) We always prefer to send our articles to *The Annals* first; they have the highest impact factor in our field.
- 33) Dr. Scott went to the pathology department quite often; the secretaries even knew her name.
- 34) Most clinicians consider themselves perfectly capable of reading chest X-rays; indeed, they rarely bother to consult a radiologist at all.
- 35) The lab manager has promised to implement better safety measures, and the technicians have agreed to undergo additional training.

#### EXERCISE 45

- 1) We studied four-year-old children with atopic dermatitis. *Unless you wanted to say you studied four children who were a year old, which would be four year-old children.*
- 2) This experiment requires a little-used beaker not found in many laboratories. *Meaning the beaker is not very common; without the hyphen, readers might think of a small beaker that is not new.*
- 3) High-school-age students require different disciplinary approaches. *About 15 to 18 years old. High school-age students would be children 5 to 18 years old on drugs!*
- 4) Patients with tightly controlled glycemia develop fewer insulin-related complications.

- 5) The host's endothelial cells *re-cover* the corneal graft, restoring clarity. *They cover it again; they don't recuperate or retrieve it.*
- 6) Follow-up visits should follow the three-step protocol.
- 7) We must follow up the cohort to see whether there are long-term changes.
- 8) Acetylcholine-induced endothelium-dependent relaxation was associated with the endothelium-dependent hyperpolarization of the smooth muscle cells in the mesenteric arteries.
- 9) The five-hour experiment had to be repeated three times.
- 10) An ad hoc committee was set up to explore ethics-related issues in molecular genetics.

#### EXERCISE 46

- 1) They did a *four-year outcome-based* study on wound healing and limb salvage in patients with *frostbite*.
- 2) The article reported the findings from a randomized, placebo-controlled, clinical trial measuring the effects of high-dose supplementation with vitamins C and E, beta carotene, and zinc on age-related macular degeneration. *Correct as is, though arguably the hyphen between high and dose is not strictly necessary.*
- 3) Her back was covered with purplish-red lesions. *Correct as is.*
- 4) Figure 3 shows a *black-and-white* photograph of the device.
- 5) The placenta is a *low-resistance pathway* in the fetal circulation.
- 6) It was a *double-blind crossover* study about *cell-mediated* immunity.
- 7) The movement of small ions through *cell-to-cell* gap junction channels mediates intercellular signaling at electrical synapses.
- 8) A two-month-old baby presented with a fever and projectile vomiting. *Correct as is.*
- 9) We studied *in vivo* glucose metabolism in *type II* diabetic patients.
- 10) We discuss complications resulting from the unintentional intra-arterial injection of drugs. *Although there is a trend toward considering intraarterial correct.*

#### EXERCISE 47

- 1) The physicians involved (H. Jackson, J. Mandarino, and S. Freeman) are being sued.
- 2) Four viruses can cause Ebola hemorrhagic fever: BDBV, EBOV, SUDV, and TAFV.
- 3) Sometimes, however, microbes normally found in the environment can overcome your defenses, regardless of your general health.
- 4) Karen Smythe, later to be appointed department head, had supported the residents in their fight for better working conditions.
- 5) In last week's NEJM, one of my favorite journals, there was an interesting article about the dangers of calcium supplements to prevent osteoporosis.
- 6) Patients who were classified as grade I and grade II were followed for 6 months and 12 months, respectively.
- 7) The article was published by Nancy Ingram, MD, and Mary Lou Reina, PhD.
- 8) The *in vitro* assay showed that the drug was promising.
- 9) Biological membranes are made of three major components: lipids, proteins, and sugars, which are attached to some of the lipids and proteins by covalent bonds.

- 10) However, in membranes of the endoplasmic reticulum, where phospholipids are synthesized, rapid transverse diffusion of particular lipids takes place across the bilayer.
- 11) In general surgery, familiarity with a wide range of suturing techniques is useful.
- 12) In general, surgery is restricted to patients who do not respond to medical treatment.
- 13) The Diabetic Foot Unit is led by physicians from three specialties: podiatry, endocrinology, and vascular surgery.
- 14) However CT examinations are performed, they deliver a large dose of radiation.
- 15) However, CT examinations are performed when MRI is contraindicated, for example, in patients with implanted metallic prostheses or electronic devices or in those with claustrophobia.
- 16) Matrix metalloproteinases (MMPs) are zinc-dependent endopeptidases; other family members are adamalysins, serralysins, and astacins.
- 17) The 1982 Working Formulation introduced the category non-Hodgkin lymphoma, divided into 16 different diseases; however, because these different lymphomas have little in common with each other, the non-Hodgkin label is of limited usefulness.
- 18) However, mistakes do occasionally occur; for example, the Therac-25 radiation therapy machine was responsible for at least six accidents between 1985 and 1987, where patients were given up to one hundred times the intended dose.
- 19) A cyst may contain air fluids or semisolid material; a collection of pus is called an abscess, not a cyst.
- 20) Myotonic muscular dystrophy type 1, also known as Steinert disease, is the most common adult form of muscular dystrophy; it results from the expansion of a short repeat in the DNA sequence of the myotonic dystrophy protein kinase gene.
- 21) Because ketamine can cause hallucinations, it is not usually used as a primary anesthetic; however, since it suppresses breathing much less than most other anesthetics, it is the anesthetic of choice when reliable ventilation equipment is not available.
- 22) Chemically oxidative stress is associated with increased production of oxidizing species or a significant decrease in the effectiveness of antioxidant defenses, such as glutathione.
- 23) The production of nitric oxide is elevated in populations living at high altitudes, which helps these people avoid hypoxia by aiding in pulmonary vasculature vasodilation.

#### EXERCISE 48

- 1) He earned a PhD from Ohio State University.  
*The name of the university is a proper noun, so all parts must be capitalized.*
- 2) Her father was the chairman of the anatomy department.  
*All generic nouns: no capitalization is necessary.*
- 3) Duplex ultrasonography combines B-mode imaging to visualize morphology and color Doppler imaging to visualize flow.  
*Doppler is a proper noun.*
- 4) We found several species of staphylococci, including *Staphylococcus aureus*.  
*Only the name of the genus is capitalized, and only when we list the taxonomic name with genus and species.*
- 5) All conference abstracts will be published in Spanish and English.  
*We must capitalize the names of languages and nationalities.*
- 6) All patients underwent magnetic resonance imaging (MRI).  
*We do not capitalize words used to define acronyms (except when they would otherwise be normally capitalized).*

- 7) My daughter was born on Friday, September 30, 2005.  
*Capitalize the names of days of the week and months of the year.*
- 8) None of the teaching assistants supported Professor Wilkins in his bid to become the dean.  
*Terms describing titles and positions are capitalized when used together with the holder's name.*
- 9) Her career took her from Northern California to Southeast Asia.  
*Capitalize words related to compass points ONLY when they refer to a specific region.*
- 10) The best book I have read this year is *Genome: The Autobiography of a Species in 23 Chapters*.  
*Do not capitalize articles or prepositions in titles, except when they are the first word or the first after a colon.*
- 11) The results of Experiment 3 are shown in Table 4 and Figure 5.  
*Capitalize nouns followed by numerals or letters.*
- 12) We used a murine model of diabetes mellitus.  
*Do not capitalize the names of models or conditions.*
- 13) The most common cyanotic heart defect is the tetralogy of Fallot.  
*In eponymous terms, only the person's name is capitalized.*
- 14) She wrote a book entitled "On ANCA-Associated Small-Vessel Vasculitis Among Young Native-American Women".  
*On is the first word, Among is more than three letters; although Native-American could be considered a single word, the second word is a proper noun.*

**EXERCISE 49**

- 1) Viral Evolution in Chronic Hepatitis B: a Branched Way to HBeAg Seroconversion and Disease Progression?  
*Note that some journals also capitalize the first letter after a colon.*
- 2) Deficiency of Intestinal Mucin-2 Ameliorates Experimental Alcoholic Liver Disease in Mice
- 3) Beclin-2 Functions in Autophagy, Degradation of G-Protein-Coupled Receptors, and Metabolism  
*Correct: all the elements in hyphenated expressions are usually capitalized.*
- 4) Loss of CARM 1 Is Linked to Reduced HuR Function in Replicative Senescence  
*Verbs should be capitalized, even the verb "to be".*
- 5) Resonance Raman Characterization of the Ammonia-Generated Intermediate of Cytochrome c Oxidase from *Paracoccus denitrificans*.  
*In taxonomic names (Genus followed by species), the species is not capitalized.*

**EXERCISE 50**

- 1) This is a photo of Hector's, where you can see the new microtome. *CORRECT: This photo belongs to Hector.*
- 2) This is a photo of Hector. *CORRECT.*
- 3) This is a malignant tumor—look at its pattern of radiotracer uptake.
- 4) *Lab technicians* are expected to attend the session.
- 5) Dr. Ross' son will be doing a fellowship at Yale. *CORRECT, although it is also correct to write Dr. Ross's.*
- 6) Many from the class of '99 have succeeded. *CORRECT.*
- 7) They work at Johns Hopkins Medical Center. *CORRECT: this is the name of the institution.*

- 8) The **Centers** for Disease Control is a founding member of the International Association of Public Health **Institutes**. *CORRECT: These are the names of the institutions.*
- 9) Is that specimen **hers** or **yours**?
- 10) **Senior staff members'** salaries are competitive with those in the private industry.
- 11) In **four months'** time, I will have published my first paper.
- 12) **It's** important to seek the **committee's** approval before starting your experiments. *BUT, if talking about more than one: committees'.*
- 13) Have you read John and Anna's review in *Cell*? *CORRECT: we are talking about a single review article that belongs to both of them.*
- 14) **Julia's** and Joseph's lab coats need to go to the cleaners. *We are talking about two lab coats belonging to two different people.*
- 15) The **Rockefellers'** generous donation covered the building and the lab equipment. *The Rockefellerers = the Rockefeller family.*

### EXERCISE 51

- 1) The male-to-female ratio is about 2:1.
- 2) The experiment that we discussed last month was never done. *No commas.*
- 3) However, the postdoc's English is terrible, so she is unlikely to understand the details of the presentation.
- 4) Department of Thoracic Surgery, Hospital Vall Hebron. Barcelona, Spain.
- 5) The senior resident explained why she hadn't asked for help before. *No question mark.*
- 6) In the last five years, we have published an average of 7.3 papers per year.
- 7) I can be found in the lab on **Mondays**, **Wednesdays**, and **Fridays**; however, I am never there on **Tuesdays** or **Thursdays**. *Days of week capitalized, no apostrophes.*
- 8) Three-fifths of the paramedics who responded to the survey had symptoms of burn out in the previous three years. *No commas; hyphen in three-fifths but not in three years.*
- 9) Cri du chat syndrome is a group of symptoms which result from a deletion on the fifth chromosome. *No commas.*
- 10) Influenza can cause severe infections in patients with cystic fibrosis. *No hyphen.*
- 11) The twins' father was the primary caretaker. *He is the father of both twins.*
- 12) All patients underwent **positron emission tomography** (PET).
- 13) Dr. Salem's secretary's English is excellent. *Correct as is.*
- 14) Despite Dr. Preston's qualifications, I don't think he's right for the job. *No comma after think.*
- 15) The course was held in Miami **Beach Convention Center** in Miami, Florida. I could see the **Atlantic Ocean** from my room. *No comma before in.*

### EXERCISE 52

- 1) 223 ICU chiefs were surveyed; a total of 446 20-minute telephone interviews were conducted. *We surveyed 223 ICU chiefs and conducted 446 twenty-minute interviews.*
- 2) Four hundred and sixty-five patients were enrolled in the study. Three hundred and ninety-nine com-

pleted the entire 2-month follow-up: thirty patients were lost to follow-up, twenty-nine withdrew from the study prematurely, and seven died.

*Of the 465 patients enrolled in the study, only 399 completed the entire two-month follow-up: 30 patients were lost to follow-up, 29 withdrew from the study prematurely, and 7 died.*

- 3) In five days, we observed 6 seizures in two male and twenty-two female rabbits.  
*...six seizures in 2 male and 22 female rabbits.*
- 4) 12 patients were excluded because of morbidities.  
*Twelve patients...*
- 5) 50% of the patients were discharged to home.  
*Half the patients...*
- 6) All cultures remained negative for MRSA after 3 days.  
*Correct as is: units of time are considered units of measurement.*
- 7) In about three weeks, all dogs had recovered the use of their tails.  
*Correct as is: spell out numbers one through nine with APPROXIMATE periods of time.*
- 8) The sensitivity in the twelve studies ranged from 73 to 92%.  
*... 12 studies... 73% to 92%.*  
*Repeating the percentage sign ensures clarity; note, however, that guidelines vary on this point.*
- 9) In preparation for the procedure, she was administered 2 antiplatelet drugs, dipyridamole (one hundred mg/day) and acetylsalicylic acid (one hundred mg/day), for 5 days.  
*...two antiplatelet drugs, dipyridamole (100 mg/day) and acetylsalicylic acid (100 mg/day) for 5 days.*
- 10) TNF- $\alpha$  upregulated MCP-1 mRNA expression four-fold.  
*...fourfold.*  
*Place a hyphen before fold when it follows a numeral but not a number written as a word.*

### EXERCISE 53

- 1) The prosthesis became *loose* in the neck of the femur because of bone resorption.
- 2) The day after the party, the nursing supervisor had a *severe* hangover and a badly bruised ego. *To sever means (to separate a part from the whole, e.g., by cutting).*
- 3) Fluid is hyperintense on T2-*weighted* MRI sequences. *Weighed is the past of the verb to weigh (i.e., determine the weight of); weighted is the past of the verb to weight (i.e., to attach a weight to).*
- 4) No *causal* link has been found between antiplatelet agents or anticoagulants and the risk of ICH after CAS.
- 5) It seems that the arrhythmias were caused by *scarring* from the heart valve replacement three years earlier.
- 6) You should not tell a hyperventilating patient to *breathe* into a paper bag. *Breath is the noun.*
- 7) The study aimed to *assess* the usefulness of vasodilators in patients with heart failure.
- 8) We couldn't find his chart because it was *filed* under his middle name.
- 9) A multicenter *trial* is underway to test the safety of the drug in children.
- 10) It is important not to *bathe* until the wound has healed. *Bath is the noun.*



**EXERCISE 54**

- 1) Data *acquisition* before contrast administration is important for image postprocessing.
- 2) Both topic and systemic antibiotics should be administered *immediately*.  
*Other examples include: immature, immobilize, immunology...*
- 3) Patients presenting with *biliary* colic often require intravenous analgesia.  
*Other examples include: auxiliary, pulmonary...*
- 4) *Axillary* lymph node dissection is important for detecting *metastatic* breast cancer.  
*Other examples include: ancillary, capillary, maxillary, pupillary...*
- 5) We will have to consult the *neuroradiologist*.  
*Other examples include: bilirubin, colorectal, suprarenal...*
- 6) Critical care is not a recognized *specialty* in some countries. *Speciality is correct in UK English.*
- 7) There was an outbreak of *cholera* in the refugee camp.  
*Other examples include: chondroma, chronic, psychiatric...*
- 8) The patient was referred to an *ophthalmologist*.
- 9) *Coarctation* of the aorta accounts for 5% to 8% of all congenital heart defects.  
*Other examples include: acupuncture, infarct, objective...*
- 10) Treatment for *rhabdomyosarcoma* consists of chemotherapy, radiation therapy, and sometimes surgery.  
*Other examples include: rheumatology, rhinoplasty, rhythm...*
- 11) The incidence of hepatocellular carcinoma is higher in *cirrhotic* patients.  
*Other examples include: diarrhea, hemorrhage, vasorrhaphy...*
- 12) The passage of kidney stones through the *urethra* can be painful.  
*Other examples include: thalamus, thyroid, thorax, thrombus...*
- 13) A focal stenosis in the distal *ureter* can be caused by a kidney stone.
- 14) *Enteroclysis* has been largely supplanted by CT enterography.  
*Other examples include: pleuroclysis...*
- 15) Thiazide diuretics can lead to *kaliuresis*.  
*Other examples include: kaliopenia, kaliemia...*

**EXERCISE 55**

- 1) The anterior *commissure* is less than 1/10 the size of the corpus callosum.
- 2) Magnetic *resonance* imaging shows excellent contrast among tissues.
- 3) The patient was asymptomatic. *CORRECT.*
- 4) The tissues are irrigated by the *collateral* vessels.
- 5) We are *committed* to reducing the rate of infectious complications.
- 6) Bleeding occurred in three patients in the treatment group. *CORRECT.*
- 7) Our *annual* report contains a summary of our research activity.
- 8) The great *British* surgeon pioneered antiseptic surgery.
- 9) Early appropriate antibiotic administration is *essential* in subacute *appendicitis*.
- 10) The *capillaries* are the smallest blood *vessels*.



**EXERCISE 56**

*Crohn's* disease is a type of *inflammatory bowel* disease. It is a *chronic* condition that causes *diarrhea*, abdominal pain, *vomiting*, and sometimes *weight* loss. It is caused by interactions between *environmental*, *immunological*, and bacterial factors in people who are *genetically* susceptible. People with *Crohn's* disease have *chronic recurring* periods of flare-ups and *remission*. There is no cure for *Crohn's* disease. Treatment consists of *controlling symptoms*, maintaining *remission*, and preventing relapse.

**EXERCISE 57**

- 1) Located near the circle of Willis, we saw a bilobed aneurysm.  
*We saw a bilobed aneurysm near the circle of Willis.*
- 2) They found a mature teratoma that was in the mediastinum on April 1.  
*On April 1, they found a mature teratoma in the mediastinum.*
- 3) Situated under the patient's left breast, we could see a bluish-black mole.  
*We could see a bluish-black mole under the patient's left breast.*
- 4) Blocking the splenic flexure, we found a large fecalith.  
*We found a large fecalith blocking the splenic flexure.*
- 5) Tumors, like carcinoid tumors, start in hormone-producing cells.  
*Tumors like carcinoid tumors start in hormone-producing cells.*
- 6) After sending the results, the cultures turned positive.  
*After the results were sent, the cultures turned positive.*
- 7) Adverse reactions to plasma volume expanders that are extremely uncommon in patients with septic shock probably do not involve IgE antibodies.  
*Adverse reactions to plasma volume expanders, which are extremely uncommon in patients with septic shock, probably do not involve IgE antibodies.*
- 8) Patients, who take SSRI-type antidepressants, should avoid grapefruit juice.  
*Patients that/who take SSRI-type antidepressants should avoid grapefruit juice.*
- 9) However we measured the concentration again and found no signs of error.  
*However, we measured the concentration again and found no signs of error.*
- 10) Analyzing the data statistically, terminal repeats were relatively rare.  
*Statistical analysis showed terminal repeats were relative rare.*

**Simplicity: Avoiding unnecessary complexity****EXERCISE 58**

- 1) *First*, communities need to take *preventive* measures.
- 2) We *started* the experiment on Monday morning and *finished* it on Thursday evening.
- 3) This manuscript describes a new *method* for genome mining and biosynthesis of polyketides and peptides. *If you mean set of methods, you could use approach to instead of methods for.*
- 4) *Most* experts agree that *we need to improve our methods to tackle this problem.*
- 5) Patients with lung cancer *often die*.
- 6) When *done right*, the technique *works*.
- 7) A catheter was *placed near* the *dilation*.
- 8) *Monitoring* is *essential* to *orient treatment*. Another option for *orient* is *guide*.

- 9) The *adaptable* device *made* the procedure *easier*.
- 10) *Familiarity* with the most *common* findings will *make it easier to implement* an efficient diagnostic protocol. *In some cases, enable might be a better option than make it easier to implement.*

### EXERCISE 59

- 1) We made the arrangements for the patient to be transferred.  
*We arranged for the patient to be transferred.*
- 2) The pronator teres syndrome should be taken into consideration in patients with pain in volar surface of the proximal forearm.  
*The pronator teres syndrome should be considered in patients with pain in volar surface of the proximal forearm.*
- 3) Serine proteases exhibit a tendency to be inhibited in this fashion.  
*Serine proteases tend to be inhibited in this fashion.*
- 4) You must make thorough preparations for the experiment.  
*You must prepare for the experiment thoroughly.*
- 5) We made a comparison of the two drugs and found no difference in clearance.  
*We compared the two drugs and found no difference in clearance.*
- 6) They place a major emphasis on the use of the technique in mechanically ventilated patients.  
*They strongly emphasize the use of the technique in mechanically ventilated patients.*
- 7) We performed the calibration of both thermometers.  
*We calibrated both thermometers.*
- 8) Few authors make reference to aliasing artifacts.  
*Few authors refer to aliasing artifacts.*
- 9) The authors reach the conclusion that MRI is more cost effective than CT in these patients.  
*The authors conclude that MRI is more cost effective than CT in these patients.*
- 10) Immunoglobulin M determinations were performed by nephelometry.  
*Immunoglobulin M was determined by nephelometry.*
- 11) The measurement of the concentration was made at baseline, 5 minutes after injection, and 2 hours after injection.  
*The concentration was measured at baseline, 5 minutes after injection, and 2 hours after injection.*
- 12) Henri et al. make the assumption that CT is a sufficient imaging method for ruling out pancreatic involvement.  
*Henri et al. assume that CT is a sufficient imaging method for ruling out pancreatic involvement.*

### EXERCISE 60

- 1) It is not unusual for radiologists to hold two jobs.  
*Radiologists often/sometimes/occasionally hold two jobs.*
- 2) Sex enhances pair bonding through a pathway that involves reward centers in the brain, suggesting the formation of a strong social bond is not unlike the formation of an addiction.  
*... is similar to the formation of an addiction.*
- 3) These findings are not without meaningfulness.  
*These findings are meaningful.*
- 4) Ignorance is an enduring subject, and it has not gone uninvestigated in sociology.  
*Ignorance is an enduring subject, and sociology has investigated it (thoroughly, sporadically, etc.).*

- 5) We not incorrectly surmised that it might be difficult to enroll enough patients.  
*We correctly surmised it would be difficult to enroll enough patients.*
- 6) Allergies to iodine are hardly uncommon.  
*Allergies to iodine are common. You might want to modify common with fairly or very.*
- 7) We were not unencouraged by the results.  
*We were encouraged by the results. You might want to modify encouraged with slightly, somewhat, or very.*
- 8) Heather is not unlikely to publish her article in a top quartile journal.  
*Heather is likely to publish her article in a top quartile journal. Other possibilities include Heather might publish... Heather has a chance of publishing... Heather will probably publish...*
- 9) The authors were not unaware of a possible bias.  
*The authors were aware of a possible bias. The authors knew there was a possible bias. The authors knew this bias was possible.*
- 10) Dr. Sophisticatus' writing is not infrequently incomprehensible.  
*Dr. Sophisticatus' writing is occasionally/sometimes/often incomprehensible.*
- 11) The role of MMP levels in inducing instability in carotid plaques is hardly uncontroversial.  
*The role of MMP levels in inducing instability in carotid plaques is controversial.*
- 12) We are not infrequently unable to express ourselves clearly and concisely.  
*We are occasionally/often/sometimes/often unable to express ourselves clearly and concisely.*
- 13) The reviewers' comments were not entirely uncritical.  
*The reviewers' comments were critical. You might want to modify this with slightly, somewhat, or fairly.*
- 14) However, the reviewers were hardly impartial.  
*In this case, hardly impartial might achieve a subtlety of expression not implied by other options like However, the reviewers were biased or However, the reviewers had a conflict of interest.*
- 15) To say they would not alter their data to avoid a poor grade in the course is not the least bit unlikely.  
*There is a good chance they would alter their data to pass the course.*

## EXERCISE 61

- 1) Casein peptones are made from an insoluble precipitate from acidified milk.  
*No changes are necessary.*
- 2) None of the new approaches was found to be more effective than the standard.  
*None of the new approaches was more effective than the standard.*
- 3) According to Matthay et al., this restricted, relatively nonrecruitable pulmonary vascular bed with in-ordinate high pulmonary arterial pressure is considered to be the most likely mechanism of abnormal right ventricular response to exercise.  
*Matthay et al. consider this... pressure the most likely mechanism...*
- 4) Foreman's conclusions are not supported by his findings.  
*Foreman's findings do not support his conclusions.*
- 5) When respiratory failure seemed likely, the patient was transferred to the ICU.  
*No changes are necessary.*
- 6) Our results are compared with those of previous studies in Table 2.  
*Table 2 compares our results to those of previous studies.*
- 7) Treatment with topical antifungal preparations is usually sufficient.  
*Alright, but: (Treatment with) topical antifungals usually suffices.*

- 8) Similar experiments were done by Oakes and colleagues.  
*Oakes and colleagues did similar experiments.*
- 9) The patient's body temperature was monitored by a nurse for two days.  
*A nurse monitored... However, if the qualifications of the person who monitored the patient's body temperature are not important: The patient's body temperature was monitored for two days.*
- 10) Appendicitis was confirmed at laparoscopy.  
*Alright, but: Laparoscopy confirmed appendicitis.*

## EXERCISE 62

*Suggested answers—there are various ways to break these sentences up.*

- 1) Certain kinds of mammalian cell lines that express very few endogenous ion channels have been exploited for the heterogeneous expression of ion channels. Cells in a tissue culture dish are mixed with the cDNA encoding the ion channel under conditions that permit many of the cells to take up the cDNA. This process avoids the need for transcribing messenger RNA, which is fragile and difficult to manipulate in vitro.
- 2) Anemia due to an abnormal increase in the rate of destruction of circulating red blood cells is called hemolytic anemia. Hemolytic anemia can have various causes. Sometimes the red blood cells are destroyed by antibodies from the mother, as occurs in hemolytic disease of the newborn, or by autoantibodies. Hemolytic anemia can also result from overactivity of mononuclear phagocytes in association with hypersplenism. Another cause is metabolic abnormalities in the red blood cells, such as glucose-6-phosphatase deficiency, which is aggravated by some drugs.
- 3) Catecholamine hormones (e.g., epinephrine and norepinephrine), glycoprotein hormones, and polypeptide hormones cannot pass through the lipid barrier of the target cell membrane. Although some of them can enter the cell through pinocytosis, most of their effects result from their binding to receptor proteins on the outer surface of the target cell membrane.
- 4) Pneumothorax occurs when air enters the pleural cavity through any breach in the chest wall or in the lung membrane, causing the lung to collapse. Pneumothorax can occur due to unknown causes in an apparently healthy individual (spontaneous pneumothorax) or due to trauma (traumatic pneumothorax). In the past, air was deliberately injected into the pleural space to treat tuberculosis (artificial pneumothorax).
- 5) The common fibular nerve, the smaller of the two terminal branches of the sciatic nerve, arises in the lower third of the thigh. It runs downward through the popliteal fossa, closely following the medial border of the biceps muscle. As it leaves the fossa, it superficially crosses the lateral head of the gastrocnemius muscle, passing behind the head of the fibula. It then winds laterally around the neck of the bone and pierces the peroneus longus muscle, where it divides into two terminal branches.

## EXERCISE 63

- 1) transrectal ultrasound-guided prostate biopsy false-negative prevention protocol  
*a protocol to prevent false-negative results in transrectal ultrasound-guided prostate biopsy*
- 2) interventional procedures review evaluation task force  
*a task force to review and evaluate interventional procedures*
- 3) X-ray beam adjustment calibration manual  
*a manual for adjusting and calibrating X-ray beams*
- 4) hospital information system access protocol  
*a protocol for gaining access to the hospital information system*

- 5) a fortified fat-free protein-enriched vitamin C-supplemented pellet-based diet  
*a fortified diet based on fat-free, protein-enriched pellets and vitamin C supplements*

#### EXERCISE 64

- 1) The catalysts utilized are listed in Table 2.  
*Table 2 lists the catalysts used.*
- 2) The analysis that we performed after conducting our investigation offers confirmation that blood glucose levels show a peak within an hour after the administration of the drug.  
*Our analysis confirmed that blood glucose levels peak within an hour of administering the drug.*
- 3) The comparison that was made by Jones et al.<sup>3</sup> showed that the control rats were not infrequently restless if you take into consideration that their cage was less crowded.  
*Jones et al.'s<sup>3</sup> comparison showed control rats were sometimes restless considering their cage was less crowded.*
- 4) We were cognizant that we had to take additional measures to assess our methodology.  
*We knew we had to reassess our methods.*
- 5) This preventative measure was not shown to be ineffective.  
*This preventive measure was slightly effective.*
- 6) Although he had imbibed a considerable amount of alcohol, when he undertook to ambulate, he proved to have the capability of maintaining his equilibrium.  
*Although he had drunk a large amount of alcohol, he kept his balance when he walked.*
- 7) The separation of the conjoined twins was done by a surgical team.  
*The conjoined twins were separated.*
- 8) Preparations were made to have the patient transferred to another hospital where more complex assessments could be done.  
*The patient was prepared for transfer to another hospital for more complex assessments.*
- 9) From the inception, their methodology of dilatating the stenosis was insufficient to bring about the recanalization of the vessel.  
*From the start, their method of dilating the stenosis failed to recanalize the vessel.*
- 10) Not only had we failed to perform the determinations, but we also proved to be incapable of carrying out the calibration of the device.  
*We could not determine (whatever we are aiming to determine) or even calibrate the device.*

### Concision: making every word count

#### EXERCISE 65

- 1) The myth that cell phones cause considerable electromagnetic interference in hospitals ~~environments~~ still persists.
- 2) They ~~completely~~ eliminated salt from their diet.
- 3) We implanted a titanium ~~metallic~~ hip prosthesis.
- 4) The only ~~other~~ alternative choice that is ~~available~~ would be to fuse the three vertebrae ~~together~~.
- 5) Stevens and colleagues introduced a ~~new~~ technique to extract the enzyme.
- 6) A study is ~~currently~~ underway to determine whether the drug is safe.
- 7) Sphenoid meningiomas can cause visual problems, ~~loss of sensation in the face~~, or facial numbness.
- 8) Aspirin is ~~absolutely~~ essential in the management of myocardial infarction.
- 9) We detected a ~~malignant~~ carcinoma in his right kidney.

- 10) They ~~used genetic engineering to create~~**d** a genetically modified transgenic organism that incorporated genetic material from another species.

### EXERCISE 66

- 1) She published her doctoral thesis ~~in the year~~ 2011.
- 2) Apart from ~~the presence of~~ local tenderness in the left abdomen, there were no remarkable findings.
- 3) Complications ~~are not uncommon~~ **sometimes occur**.
- 4) There was serous fluid inside ~~of~~ the pleural space.
- 5) Arthroscopy ~~was performed and the existence of~~ **confirmed the** a paralabral cyst ~~was confirmed~~.
- 6) The abdominal CT showed two large, 6 cm **round** lesions ~~that were round in shape~~.
- 7) All ~~of the~~ procedures were done under local anesthesia.
- 8) ~~It has long been known that~~ oxidative metabolism occurs in both the cytoplasm and mitochondria inside of the cells.
- 9) We estimated that ~~about one out of~~ **in** ten patients would refuse to participate.
- 10) Comorbidities were greater in number among **Older patients** **had more comorbidities**.

### EXERCISE 67

- 1) About three-quarters of patients on sustained low-efficiency dialysis received treatments ~~on a~~ daily basis.
- 2) ~~For the purpose of increasing~~ **To increase** vasculogenesis, chemokine injection at the site of injury could attract bone-marrow-derived cells.
- 3) Abstract submissions must be received ~~no later than~~ **by** October 12.
- 4) ~~A great number of the~~ **Many** experimental animals failed to survive.
- 5) This result ~~would seem to suggest~~**s** that the left angular gyrus might possibly mediate a spatial representation of number.
- 6) We determined the hepatitis C virus genotypes ~~in order to~~ define the genotypic profile and examine the relationship between genotype and the prevalence ~~as well as~~ **and** severity of liver disease.
- 7) ~~The presence of this allele has been associated with protective effects against many diseases~~ **conditions**, including ~~but not limited to development of~~ asthma, juvenile arthritis, multiple sclerosis, and liver damage from hepatitis C infection.
- 8) The patient continued to exhibit hypotension ~~in spite of the fact that~~ **although** we administered vasoactive drugs. **Or Hypotension persisted despite vasoactive drugs.**
- 9) They identified a new murine lectin-like gene ~~in close proximity to~~ **near** CD94.
- 10) ~~Due to the fact that~~ **Because** patients in the placebo group were older and sicker than those in the treatment group, the difference in mortality, although significant, may not be meaningful.
- 11) ~~Up to the present moment,~~ only two cases have been reported ~~in the literature~~.
- 12) There are **Many** germs that can cause pneumonia.
- 13) ~~It is interesting to note that~~ **This is not** **rarely** true in **laboratories** the vast majority of cases in the Laboratory environment.
- 14) ~~In the light of the fact that~~ **Since** all of the patients who died had lesions in close proximity to **near** the great vessels, ~~in all probability it is unlikely that...~~
- 15) We have insufficient knowledge to settle the question as to **do not know** whether or not this increase in nicotinic receptor levels is accompanied by changes in receptor function.

## EXERCISE 68

- 1) ~~There are~~ many conditions ~~that can~~ affect the nervous system.
- 2) ~~It has been well established that~~ cocaine is harmful to your health.
- 3) The study took place in ~~the month of~~ January ~~of the year~~ 2013.
- 4) His gallbladder was full of **brown** stones ~~that were brown in color~~.
- 5) Prof. Thomas, MD, PhD, and colleagues discovered a new, ~~previously unknown~~ species of *Giardia*.
- 6) The belief ~~still~~ persists that all cases of cholecystitis require surgery.
- 7) The ~~end~~ result was two **identical** different cells ~~that were exactly identical~~.
- 8) All traces of the thrombus were ~~completely~~ eliminated from the internal carotid artery after 2 h.
- 9) **Smaller** lesions ~~that were smaller in size~~ were followed periodically.
- 10) The alternative ~~choice~~ was to deliver the particles with a syringe.

## Fluidity: Keeping the thread

## EXERCISE 69

A + B

- 1) The prevalence of type 1 diabetes in the UK is one of Europe's highest. In 2008, **the estimated rate** was 1.9 per 100,000 children under 18 years of age. Furthermore, strong evidence suggests **this prevalence** is increasing. **d)** If the trend toward higher prevalence continues, the rate will have nearly doubled by 2020.
- 2) The UK has the **one of the highest prevalences** of type 1 diabetes **in Europe** (1.9/100,000 children <18 years of age). **This rate** is at least ten times **higher than that of some other European countries**. The reason for this large difference is unknown. **b)** The specific roles of genetics and environmental factors remain to be elucidated.
- 3) One of Europe's highest prevalences of type 1 diabetes occurs in the UK. Researchers **at UK universities and NHS hospitals** are at the forefront of research into **this disease**. **a)** Not only have they published the four largest series of type 1 diabetes patients to date, they have also made some of the most striking discoveries.
- 4) The UK has one of Europe's highest prevalences of **type 1 diabetes**. **This disabling disease** costs the country huge amounts of money. **c)** Not only does the state pay for expensive treatment through the National Health Service, but the government also pays for care for children with diabetes through its Disability Living Allowance programme.

## EXERCISE 70

Single-center studies have reported benefits for combination therapy in pneumococcal bacteremia [8], Gram-negative bacteremia [9], infective endocarditis [10], and community-acquired pneumonia<sup>1</sup> [3-7, 11, 12, 13]. Two multicenter studies compared combination therapy with monotherapy in patients with community-acquired pneumonia; both<sup>2</sup> found improved outcome in patients receiving combination therapy. In the first,<sup>3</sup> a randomized clinical trial comparing beta-lactam monotherapy versus beta-lactam plus a fluoroquinolone in 14 hospitals in France, Janice et al. [14] reported shorter hospital and ICU stay and a trend toward improved survival. In the second,<sup>4</sup> a case-control study of 654 patients in 22 hospitals in Spain, López et al. [15] reported that patients receiving combination therapy with a beta-lactam plus a macrolide had shorter hospital and ICU stay, fewer readmissions, and lower in-hospital, 30-day, and 90-day mortality rates than those receiving a beta-lactam alone. Interestingly, in both studies this protective effect<sup>5</sup> was more pronounced in the more severe patients. Although to date no studies comparing fluoroquinolone-based combination therapy with macrolide-based combi-



nation therapy have been published, Charles et al. [16] reported a multiple treatment comparison meta-analysis indirectly comparing the two combinations.<sup>6</sup> These authors<sup>7</sup> showed including a macrolide in combination therapy improved survival compared to combination therapy with fluoroquinolones. Thus,<sup>8</sup> combination therapy including macrolides seems recommended in patients with community-acquired pneumonia caused by bacteria.

The rationale for combining antibiotics in patients with community-acquired pneumonia<sup>9</sup> is based on their different mechanisms of action, resulting in synergistic killing and a broader antimicrobial spectrum; however,<sup>10</sup> the success of macrolides in combination therapy might be more related to their anti-inflammatory effects than to their anti-infective properties [3, 16-18].

<sup>1</sup> Placing “community-acquired pneumonia” last in the list, because this is the topic of the rest of the paragraph.

<sup>2</sup> “both” refers back to “two studies”.

<sup>3</sup> Reminds readers we are still talking about the two studies.

<sup>4</sup> Reminds readers we are still talking about the two studies.

<sup>5</sup> Reminds readers we are still talking about the two studies.

<sup>6</sup> fluoroquinole-based and macrolide-based combination therapies.

<sup>7</sup> Reminds readers we are still talking about Charles et al.’s studies.

<sup>8</sup> “Thus” implies that this conclusion follows logically from what came before.

<sup>9</sup> “community-acquired pneumonia” links this paragraph to the one that came before.

<sup>10</sup> “however” shows that we have a contrast with the presumed rationale in the first part of the sentence.

## EXERCISE 71

- 1) *Most readers find text B easier to follow because the information is presented in a way that enables new information to be assimilated in the framework of created by what comes before.*

### Text A

[1] Calcium channels are particularly interesting because this mineral does much more than simply carry a charge across the membrane. [2] Calcium’s role as an intracellular messenger might be even more important than the calcium ions’ essential contributions to neuronal electrical activity.<sup>1</sup> [3] Calcium ions that enter the cell regulate several intracellular enzymes after they bind with proteins.<sup>2</sup> [4] Moreover, the gating of several types of ion channel is regulated by intracellular calcium ions, which are even involved in the deactivation of some of their own channels.<sup>3</sup> [5] Finally, intracellular calcium has a tremendous effect on signaling between neurons because it directly controls the release of chemical neurotransmitters at synapses.<sup>4</sup> [6] Thus, calcium plays a key role in the functioning of the nervous system.

### Text B

[1] Calcium channels in neuronal cell membranes<sup>5</sup> are particularly interesting because calcium does much more than simply carry a charge across the membrane. [2] Although calcium ions’ contributions are essential to neuronal electrical activity, calcium’s role as an intracellular messenger might be even more important.<sup>6</sup> [3] Calcium ions that enter the cell bind with proteins and then regulate several intracellular enzymes.<sup>7</sup> [4] Intracellular calcium ions also regulate the gating of several types of ion channel and are even involved in deactivating some of their own channels.<sup>8</sup> [5] Moreover, intracellular calcium directly controls the release of chemical neurotransmitters at synapses, so it has a tremendous effect on signaling between neurons.<sup>9</sup> [6] Thus, calcium plays a key role in the functioning of the nervous system.

<sup>1</sup> New before given.

<sup>2</sup> Reverse chronological order.

<sup>3</sup> New before given; passive voice and more complex sentence structure.



- <sup>4</sup> Consequence before cause.
  - <sup>5</sup> Provides a context early in the text.
  - <sup>6</sup> Given before new.
  - <sup>7</sup> Chronological order.
  - <sup>8</sup> Cohesive –begins with concept discussed in previous sentence. Active voice and relatively simple sentence structure.
  - <sup>9</sup> Cause before consequence.
- 2) *Most readers find text B easier to follow because the information is presented in a way that enables new information to be assimilated in the framework of created by what comes before.*
- Text A describes the rate of change, then the baseline condition (with a definition of the key term) and the reason for the change.*
- Text B begins by defining the key term. Then it goes on to describe the baseline condition, the reason for change, and finally the rate of change.*

## EXERCISE 72

### Example answer

Malignant tumors of the testicle usually present as a painless lump. These tumors are rare; only about 1 in 250 men develop testicular cancer sometime in their lives. The cause of testicular cancer is unknown. However, the risk of developing cancer is increased in testicles that failed to descend into the scrotum during fetal development (cryptorchidism). This increased risk persists even when the testicle is surgically descended early in life. However, this operation makes it is easier to detect the lump than if the testicle was left inside the abdomen. Testicular cancer can be successfully treated by surgery, radiation therapy, or chemotherapy, and most patients survive, even those with metastases to the abdomen.

## EXERCISE 73

- 1) It was both a brilliant article and very concise.  
*It was both a brilliant and very concise article.*
- 2) Ultrasonography is noninvasive, inexpensive, and in nearly all hospitals.  
*Ultrasonography is noninvasive, inexpensive, and widely available.*
- 3) She wants to learn how to read mammograms, do sonography, and how to perform biopsies.  
*She wants to learn how to read mammograms, do sonography, and perform biopsies.*
- 4) First, ensure the patient is conscious; secondly, she must be able to understand you.  
*First, ensure the patient is conscious; second, ensure she can understand you. A simpler answer would be Ensure the patient is conscious and can understand you.*
- 5) The laboratory findings are listed in Table 2 and the relation between them in Figure 1.  
*The laboratory findings are listed in Table 2 and the relation between them is illustrated in Figure 1.*
- 6) Not only was the experiment well designed, but also perfectly executed.  
*Not only was the experiment well designed, but it was also perfectly executed. Or The experiment was not only well designed but also perfectly executed. And of course the simplest option is The experiment was well designed and perfectly executed.*
- 7) The patient agreed to undergo hemodialysis not a clinical trial.  
*The patient agreed to undergo hemodialysis not to participate in a clinical trial.*
- 8) Being concise is nearly as important as it is to be clear.  
*Being concise is nearly as important as being clear.*

- 9) The device saves time, decreases costs, and patients will be safer.  
*The device saves time, decreases costs, and increases patient safety.*
- 10) The sensitivity in our study was superior and more variable than the other studies.  
*The sensitivity in our study was superior to and more variable than in the other studies. Or The sensitivity in our study was higher and more variable than in the other studies.*
- 11) In hemochromatosis, iron accumulates in the pancreas, the liver, and heart.  
*In hemochromatosis, iron accumulates in the pancreas, liver, and heart.*
- 12) We told patients that they should drink plenty of water, avoid alcohol, and to sleep eight hours a night.  
*We told patients they should drink plenty of water, avoid alcohol, and sleep eight hours a night. Or We told patients to drink plenty of water, avoid alcohol, and sleep eight hours a night.*
- 13) The major cause of direct lung injury is pneumonia, and sepsis is the major cause of indirect lung injury.  
*The major cause of direct lung injury is pneumonia, and the major cause of indirect lung injury is sepsis. Or Pneumonia is the major cause of direct lung injury.*
- 14) Exercising is as important as it is to diet.  
*Exercising is as important as dieting. Or It is as important to exercise as it is to diet.*
- 15) The lab manager has promised to implement better safety measures, and the technicians have agreed to additional training.  
*The lab manager has promised to implement better safety measures, and the technicians have agreed to undergo additional training.*

#### EXERCISE 74

- 1) *Erythrocytes* are the most common type of blood cell. *Red blood cells (RBCs)* deliver oxygen to the body tissues through the circulatory system. These *red corpuscles* take up oxygen in the lungs and deliver it while squeezing through the capillaries. Unlike other cells, mature *red cells* have no nucleus. **Choose one term and use it consistently. If red blood cells is chosen, red cells call also be used as a reduced form provided the connection is clear.**
- 2) The *lateral sulcus* runs between the frontal lobe and the temporal and parietal lobes. It is one of the most prominent structures in the human brain. The *lateral fissure* is found in both hemispheres, but it is longer in the left hemisphere in most people. Also called *the Sylvian fissure*, because its discovery was attributed to the Greek physician Sylvius, the *lateral sulcus* is one of the earliest developing sulci in the human brain. **There are at least ten terms that are commonly used to refer to this anatomic structure. Choose one and be consistent.**
- 3) *Adrenaline* is a naturally occurring hormone produced in the *suprarenal glands*. The *adrenal medulla* secretes *adrenaline* in times of stress. *Epinephrine* increases the speed and force of the heart beat and thus cardiac output. *Adrenalin* has been produced synthetically since 1900. The drug *epinephrine* is sometimes given by injection as an emergency treatment for cardiac arrest. **Adrenaline=epinephrine; suprarenal glands=adrenal glands; Adrenalin is the brand name for the synthetic form of epinephrine used as a drug and is also a common alternative spelling for adrenaline.**
- 4) *Ultrasound scanning* is a diagnostic technique in which very high frequency sound waves are passed into the body and the reflected echoes are used to construct a picture of what is inside the body. Unlike some other imaging techniques, *ultrasonography* uses no ionizing radiation, and it is considered totally noninvasive. For this reason, *sonography* is the most common imaging technique during pregnancy. **Choose one term and use it consistently. The most popular choice often depends on the field.**

- 5) The *hypophysis* is a protrusion at the bottom of the hypothalamus. Functionally, it is connected to the hypothalamus by the *pituitary stalk*. The *pituitary gland* secretes nine hormones that regulate homeostasis. Diseases of the *hypophysis* can thus affect the organism in many different ways. *Hypophysis = pituitary gland*. If you choose hypophysis, it would be better to use *hypophyseal stalk*.

## EXERCISE 75

- 1) Chronic dialysis catheters have a cuff that is *tunnelled* about 3 cm to 8 cm beneath the skin. **UK.**
- 2) At least two gene pairs are thought to control human hair *color*. **US.**
- 3) The staff of the *Paediatrics* Department *are holding* a talent show to raise funds for playroom. **UK.**
- 4) We *utilised* a novel *manoeuvre* to retrieve the stent graft. **UK.**
- 5) Dr. Jordan has invented a new *breathalyzer* to detect certain volatile organic compounds. **US.**
- 6) The *hematologist* diagnosed *leukemia*. **US.**
- 7) *Haemolytic anaemia* is caused by the abnormal breakdown of red blood cells. **UK.**
- 8) The urologist, *Mr Chandragupta*, and the *anaesthetist*, *Dr Gray*, never speak to one another outside the operating *theatre*. **UK.**
- 9) The outpatient clinic is open from 9 a.m. to 5 p.m. *Monday through Friday* except on holidays. Only emergency patients are attended *on weekends*. **US.**
- 10) After *gray-scale* ultrasonography, we always do *color* Doppler imaging because the *behavior* of the *tumor* at *color* Doppler is often indicative of its benign or malignant nature. **US.**
- 11) At our *centre*, we use large *calibre* needles for core biopsy. **UK.**
- 12) We used fluoroscopy to *visualise* the *oesophageal* course during catheter ablation of atrial fibrillation. **UK.**
- 13) This paper reports a pilot study using a remote EEG headband that provides a real-time EEG read-out unencumbered by conventional *artifacts*. **US.**
- 14) Studies on the viability of limited bowel catharsis using *faecal-labelling* techniques have been encouraging. **UK.**
- 15) We aimed to determine the *etiology* of *diarrhea* in travelers to Nepal. **US.**

## EXERCISE 76

- 1) American English: To ~~minimise artefacts~~ *minimize artifacts* due to variations in staining, all samples were processed in parallel.
- 2) British English: The ~~cecum~~ *caecum* had *oedema* of unknown ~~etiology~~ *aetiology*.
- 3) American English: We report a multicentre study of ~~paediatric~~ *pediatric* ~~anaemia~~ *anemia*.
- 4) British English: We reviewed the relation between ~~estrogen~~ *oestrogen*-binding receptors and the metastatic ~~behavior~~ *behaviour* of breast tumours.
- 5) American English: We use statistical ~~modelling~~ *modeling* and analysis to ~~characterise~~ *characterize* genes that influence susceptibility to disease.
- 6) British English: Her doctoral thesis was about ~~leukopoiesis~~ *leucopoiesis* in hematopoietic *haemato-poietic* organs in the fetus.
- 7) American English: The ~~paediatricians~~ *pediatricians* in the group ~~criticised~~ *criticized* the ~~organisation~~ *organization* for the lack of material about childhood diseases in the ~~programme~~ *program*.
- 8) British English: ~~Septicemia~~ *Septicaemia* can cause hemolytic *haemolytic* uremic *uraemic* syndrome, resulting in acute renal failure and sometimes severe ~~hemorrhage~~ *haemorrhage*.

- 9) American English: She was ~~sceptical~~ *skeptical* about ~~travelling~~ *traveling* to be treated by a more ~~skillful~~ *skillful* surgical team.
- 10) British English: Low ~~enrollment~~ *enrolment* led to the ~~cancellation~~ *cancellation* of the trial.

### EXERCISE 77

- 1) We measured the peak systolic velocity (PSV) in the external carotid artery (ECA) and in the internal carotid artery (ICA). PSV was normal in the ECA ~~artery~~ but elevated in the ICA ~~artery~~.
- 2) Intratubal transfer (TIT) of gametes and TIT of zygotes *Gamete intrafallopian transfer (GIFT) and zygote intrafallopian transfer (ZIFT)* are common assisted reproductive technology (ART) techniques. *Apart from not using the standard English terminology, the acronym TIT is offensive.*
- 3) All ~~patients who survived~~ (PWS) *survivors* had severe cognitive deficits.
- 4) ~~An~~ *A* SNP is a DNA-sequence variation in which a single nucleotide differs between members of a species. *The acronym SNP is pronounced "snip".*
- 5) Observations after 12 weeks of treatment were excluded from the ANOVA ~~analysis~~.
- 6) Adverse Drug ~~drug~~ *Reactions* *reactions* (ADR) were recorded at each center and uploaded to a centralized database.
- 7) Tartrate-resistant acid phosphatase (~~FART~~) (*TRAP*) is an enzyme expressed in bone-resorbing osteoclasts, inflammatory macrophages, and dendritic cells. *FART is the Spanish acronym; it is also an offensive word in English.*
- 8) We did ~~an~~ *a* US examination to rule out appendicitis. *The pronunciation of the letter U begins with a Y (consonant) sound.*
- 9) ~~MRNA transport differs between eukaryotes and prokaryotes.~~ *Transport of mRNA differs between eukaryotes and prokaryotes.*
- 10) ~~Telediastolic~~ *End-diastolic* volume (ESV) is the volume of blood in the ventricle at the end of contraction. *In this case, the abbreviation was correct, but the term it defined was not.*

### EXERCISE 78

- 1) There are several subsets of thymic lymphocytes: the helper T lymphocytes, cytolytic T lymphocytes, and ~~the~~ suppressor T lymphocytes.
- 2) The treatment of anemia depends on its ~~aetiology~~ *etiology*. OR: The treatment of ~~anemia~~ *anaemia* depends on its aetiology.
- 3) I agreed I would review your paper not ~~to~~ rewrite it.
- 4) ICU patients often develop *neurocognitive impairments* that can be observed years after discharge. These *neuropsychological and psychological deficits* have an important impact on patients' quality of life. *If these terms are synonymous, the same term should be repeated. If they are different, the differences should be made clear.*
- 5) Disulfide bonds in keratin ~~fibres~~ *fibers* confer mechanical rigidity. OR: Disulfide *Disulphide* bonds in keratin ~~fibres~~ confer mechanical rigidity.
- 6) Lipocytes specialize in storing energy as fat. The number of lipocytes can increase once existing ~~fat cells~~ *lipocytes* are full, but the number of ~~adipocytes~~ *lipocytes* does not decrease after weight loss.
- 7) The animal's behavior showed the ~~anaesthetic~~ *anesthetic* was ineffective. OR: The animal's ~~behavior~~ *behaviour* showed the anaesthetic was ineffective.
- 8) Carney complex is characterized by superficial angiomyxomas, cardiac myxomas, lentigines, and endocrine hyperactivity. ~~LAMB~~ *This* syndrome shows no racial predilection. Men and women are equally likely to have ~~NAME syndrome~~ *Carney complex*.

- 9) Protocols help avoid errors in carrying out tests and *writing* reports.
- 10) The large bowel absorbs water from the remaining undigested matter and passes waste material from the body. Colorectal cancer develops in the large intestine *bowel*, but other diseases also affect ~~the colon~~ *this structure*.
- 11) Whereas standard EKGs record information from 12 leads, Holter monitors typically have only 2 or 3 EGG *EKG* channels. *Or change EKGs to ECGs.*
- 12) The residents found the session too detailed, too complex, and ~~thought it could have been shorter~~ *too long*.
- 13) Our team is interested *in* and excited about the grant opportunity. *Though either interested in or excited about could probably be deleted.*
- 14) We studied the effects of estrogen-induced uterine oedema *edema* on foetal *fetal* development. Or: We studied the effects of ~~estrogen~~ *oestrogen*-induced uterine oedema on foetal development.
- 15) Glial cells play a role in ~~dilating arterioles and in their constriction~~ *the dilation and constriction of arterioles*.

### 3. The overview

#### Titles

##### EXERCISE 79

- 1) A study of the **P**armacodynamics and pharmacokinetics of intravenously administered digoxin and digitoxin
- 2) An investigation into the **E**ffects of XYZ39 on liver fibrosis in adult male Wistar rats
- 3) The nature of the **I**nteraction between norepinephrine and magnesium sulfate on cerebral vasoconstriction in rabbits' brains
- 4) A **C**omparison of the normal findings in the elastic fibers in the musculature of the rectosigmoid colon **musculature** in children compared with the findings with and without Hirschsprung's disease
- 5) A description of the **N**ormal anatomy, anatomical variants, and common abnormalities of the cerebral vessels in the circle of Willis on magnetic resonance angiography

##### EXERCISE 80

##### *Suggested answers*

- 1) Micro positron emission tomography assessment of rat brains
- 2) Anesthesia-related complications in babies/newborns/infants
- 3) Predicting the pharmacokinetic profile of losartan based on in vitro uptake transport data (in humans)
- 4) Effects of mistoprostol on the ultrastructural changes in renal tissues in adults treated with cisplatin: preliminary results of a multicenter study
- 5) Factors predisposing to multiple sclerosis

##### EXERCISE 81

- 1) **C is the best answer.** The study is concerned with more than the incidence alone, so *A* is not a good answer. The study does not talk about what happens to patients after they develop chondrosarcoma, so *B* is not a good answer. The study classified disease based on location rather than severity and discussed factors involved in the development of chondrosarcoma, not its outcome; therefore, *D* is not a good answer.
- 2) **C is the best answer.** *A* makes no mention of early laparoscopic cholecystectomy. *B* focuses only safety and ignores other outcome variables as well as possible advantages and disadvantages of the two techniques; for the same reason, *D* is not a good answer.

## Abstracts

### EXERCISE 82

1) CONCLUSION

The prevalence of hypercalcemia was significantly higher in lithium-treated patients than in controls. Prevalence correlated with the cumulative time under lithium treatment. *We recommend routine screening of serum calcium in patients treated with lithium to detect LIH or hypercalcemia due to other causes.*

*Adding a call for action to the conclusion makes the study meaningful.*

2) BACKGROUND

*The major obstacles to the successful use of individual nutritional compounds as preventive or therapeutic agents are their efficacy and bioavailability. One approach to overcoming this problem is to use combinations of nutrients to induce synergistic effects.* The objective of this research was to investigate the synergistic effects of two dietary components: docosahexaenoic acid (DHA), an omega-3 fatty acid present in cold-water fish, and curcumin (CCM), an herbal nutrient present in turmeric, in an *in vivo* model of DMBA-induced mammary tumorigenesis in mice.

*Adding minimal background information provides the justification for the study.*

3) CONCLUSIONS

Serum MRP8/14 is a potential biomarker for disease activity in JDM in clinical practice and Research. *MRP8/14 is easy to detect in serum even at low levels; it is already in clinical use to detect gut inflammation, and it is stable in clinical serum samples even when transported at room temperature.* Tissue-infiltrating macrophages secreting MRP8/14 may contribute to myositis by stimulating the local production of cytokines directly from muscle.

*This information about the suitability of MRP8/14 as a biomarker is interesting, but the authors would need to change the focus of the abstract if they wanted to include it. This is background information, not a conclusion. The study did not address whether it is easy to detect, already in clinical use, or stable when transported at room temperature, etc.—this information was known before the study was undertaken.*

4) CONCLUSION

Baseline or functional alterations of immune/inflammatory systems contribute to heightened susceptibility to depression. *Failure to respond to antidepressant treatment may be due to increased cytokine expression.*

*The research reported in the abstract was done in rats, not humans taking antidepressants. There is no mention of humans in the methods or results.*

5) CONCLUSION

Metformin attenuates the increases in body weight, circulating progesterone and estradiol, and vascular permeability in OHSS. These effects are mediated by inhibiting the increase in the vasoactive molecules VEGF, COX-2, and partially NOS. *These molecules are increased in OHSS and are responsible for many of the symptoms related to OHSS.*

*The information that these molecules are increased in OHSS has not been provided until now; the conclusion that they are responsible for the symptoms is unfounded.*

6) *The excessive use of abbreviations makes this abstract difficult to follow.*

**EXERCISE 83***Suggested answer***BACKGROUND**

(f) Hox proteins are transcription factors involved in crucial processes during animal development. (m) Little is known about the mode of action of Hox proteins. (a) Other families of transcription factors, such as Smad or Stat, are signaling transducers. (d) Whether Hox proteins are signaling transducers has never been investigated. (c) We aimed to investigate the mode of action of mammalian Hox-A-1.

**METHODS**

(k) We used systematic yeast two-hybrid screening against ~12,200 polypeptides derived from open reading frames (ORF) to characterize the interactome of Hox-A-1. (n) We used copurification to validate the results of the screening in animal cell lines. (h) We used bimolecular fluorescence complementation (BFC) to determine where the interactions take place in live cells.

**RESULTS**

(e) Screening identified 59 interactors. (b) Copurification confirmed 45 interactors, many of which were involved in cell-signaling transduction, cell adhesion, and vesicular trafficking. (i) BFC detected 41 interactions. (l) BFC revealed distinctive intracellular patterns for these interactions. (g) The intracellular patterns for these interactions were consistent with the selective recruitment of Hox-A-1 by subgroups of partner proteins at vesicular, cytoplasmic, or nuclear compartments.

**CONCLUSION**

(j) Our characterization of the Hox-A-1 interactome suggests unexplored roles for Hox proteins in cell-to-cell communication and cell physiology.

**Conclusions****EXERCISE 84**

- 1) The authors do not report the risk for depression among heavy drinkers.
- 2) There is no mention of the (lack of) differences in troponin, CK, and ECGs in patients treated with vasopressin and norepinephrine.
- 3) There is no mention of an economic analysis. Unwarranted statements about cost-efficiency are a common mistake in scientific papers.

**EXERCISE 85***Suggested answers*

- 1) More than half the samples tested were defective. Strict quality control measures are urgently needed to maintain the quality of amoxicillin–clavulanic acid in tropical developing countries.
- 2) ACE inhibitors reduce both systolic and diastolic blood pressure less in blacks than in whites. Other classes of drugs may be preferable for treating hypertension in blacks.
- 3) The *Aquilaria crassna* leaf extract has *in vitro* antibacterial activity against *Staphylococcus epidermidis* by interfering with bacterial cell wall synthesis and inhibiting biofilm formation. It also has antioxidant properties. No acute toxicity was observed in mice even at large doses. *Aquilaria crassna* might be useful for developing drugs against *Staphylococcus epidermidis* and other Gram-positive bacteria.



## 4. Putting it all together: Additional exercises

### EXERCISE 86

- 1) CT allowed to be confirmed a stone in the left ureter *to be confirmed*.
- 2) Frontotemporal lobular *lobar* degeneration is a term used to describe a group of clinically, pathologically, and genetically heterogeneous disorders that cause dementia.
- 3) The people from the pharmaceutical company *is are* waiting in your office.
- 4) None of the studied patients *studied* died.
- 5) We studied the physiopathology *pathophysiology* of arterial stiffness in patients on hemodialysis.
- 6) Dr. Brescia is a member of the Association of Medical Directors of America *American Medical Directors Association*.
- 7) Most infants *children* (87%) responded to all the questions on the questionnaire.
- 8) The gastroenterology resident asked that I *me to* do a barium study.
- 9) It is important to discard *rule out* DNA contamination in the RNA preparations.
- 10) Dr. Hill suggested to do *doing* a colonoscopy.
- 11) Dr. Budinsky explains very well the procedure *very well*.
- 12) Some of the reactant *reagent* remained after the reaction.
- 13) When I was at college *school*, I was the youngest child in my class; however, during my career *at university* I was the oldest in the faculty *department*.
- 14) Dr. Oates would like *to* see the results of the analysis.
- 15) Infirmary *The nursing staff* complies with hand-washing protocol better than the physicists.
- 16) Osteomuscular *Musculoskeletal* disorders can affect the muscles, joints, tendons, ligaments, and nerves.
- 17) Two participating centers *participating* in the study dropped out due to low recruitment.
- 18) The telediastolic *end-diastolic* volume is the amount of blood in the ventricle after contraction.
- 19) Please show us the *patient's* chart of the patient.
- 20) The reported rates of complications oscillated *ranged* between 1% and 34%.

### EXERCISE 87

- 1) A study is currently underway to determine whether or not sex is an independent risk factor.
- 2) *Many patients had* complications after surgery occurred in a great number of patients.
- 3) Adipose tissue has a honeycomb appearance due to the fact that *because* lipids are removed during normal tissue processing.

- 4) The paper needs to be published ~~no later than~~ *by* April 1.
- 5) ~~There are~~ *Many* germs that can cause pneumonia.
- 6) She published her doctoral thesis in ~~the year~~ 2011.
- 7) Early occlusion of the stent may be due to the fact that angioplasty is performed when the patient is hypercoagulated. *Performing angioplasty when the patient is hypercoagulated can cause early occlusion of the stent. Or: Early occlusion can result from angioplasty in hypercoagulated patients.*
- 8) The lesion was round ~~in shape~~.
- 9) Subjects were weighed ~~on a~~ daily basis.
- 10) During ~~the course of~~ the experiment, untreated mice had ~~a total of~~ 12 seizures, whereas treated mice had none at all. *During the experiment can probably be omitted, too.*
- 11) Echocardiograms were performed ~~on a daily basis in~~ All patients receiving adriamycin *underwent echocardiography daily.*
- 12) Cells are joined ~~together~~ end to end to form fibers.
- 13) Lesions that were Malignant *lesions* in nature were surgically resected.
- 14) Proofreading is ~~absolutely~~ essential before sending your article for review.  
*Better: Proofread your article before sending it for review.*
- 15) Ischemic injuries due to an occlusion of the superior mesenteric artery ~~include but are not limited to~~ *can involve* the jejunum, the ileum, the cecum, and the right colon.
- 16) Abdominal palpation was used for ~~the purpose of measuring the size of~~ *to measure* the spleen.
- 17) ~~Needless to say,~~ Celiac disease and gluten sensitivity are ~~two~~ separate entities.
- 18) ~~Up to the present moment,~~ Only two cases have been reported in the literature.
- 19) A large number of *Many* findings are not infrequently equivocal.
- 20) The rate of infections was higher ~~in comparison to~~ *than* in the group receiving macrolides.  
*Or: The group receiving macrolides had fewer infections.*
- 21) There was serous fluid inside of the pleural space.  
*Or: The pleural space contained serous fluid.*
- 22) The ~~Abdominal~~ CT showed two large, *round* 6 cm lesions that were round in shape.
- 23) We estimated that ~~about one out of~~ *in* ten patients would refuse to participate.
- 24) Comorbidities were greater in number ~~among older patients~~.  
*Older patients had more comorbidities.*
- 25) ~~At the present time,~~ *We* have three full-time postdocs and six doctoral candidates.

## EXERCISE 88

- 1) PRECISION: *use accurate and specific vocabulary, use correct mechanics (grammar, spelling, punctuation), be careful with word order...*
- 2) SIMPLICITY: *choose simple terms, avoid substituting concrete verbs with abstract nouns, use the active voice when natural, avoid double negatives, keep sentences short...*
- 3) CONCISION: *avoid redundancy, eliminate unnecessary words, use shorter instead of longer expressions with the same meaning...*
- 4) FLUIDITY: *organize and structure information in a logical way, present given information before new information, arrange elements in parallel, be consistent with terminology and spelling, do not abuse abbreviations...*

## EXERCISE 89

- 1) Apart from the *this* book you have in your hands, *another* book will appear soon (in print *press*).
- 2) Martin et al.'s findings are different *differ* than *from those of* our study.
- 3) The sole exclusion criteria *criterion* was intracranial hemorrhage.
- 4) ~~It is shown in~~ *The* randomized placebo-controlled study shows that...
- 5) *A total of* 245 patients (145 men and 100 females *women*) were subjected to *underwent* ~~M~~ magnetic ~~R~~esonance ~~i~~maging.
- 6) Patients operated *on* for congenital cardiopathies *heart defects* were controlled *followed up* for two years.
- 7) Patients who past *passed* the weaning trial were extubated immediately *immediately*.
- 8) Only male rats, who weighed 500 g at a very minimum, *that weighed at least 500 g* were utilized *used* in the experiment.
- 9) We discuss about the results, that *which* are presented in Table 3 and ~~F~~Figure 2 in the final section.
- 10) Of the ~~\$250,000~~ dollars *\$250,000* we received for the study 40-per-cent *forty percent* (~~+100,000~~ *\$100,000*) were *was* spent on *equipments*. *\$100,000 (40%) is preferable*.
- 11) The vast majority *Most* of the dogs (12 out of 15) failed to survive for more than *died within* twelve weeks.
- 12) ~~An~~ *A* US examination ~~was performed and found that her appendix had signs of inflammation~~ *inflammation*.
- 13) Subjects had to be older than 65 years old, smoke at least twenty cigarettes for *per* day, and they ~~had to have~~ a body mass index of at least 25.
- 14) In patient's *patients* diagnosed of *with* malignant hepatocellular carcinoma, MRI was performed prior to performing *done before* any procedures.
- 15) The patient, an elderly man of 75 years of age *a 75-year-old man*, showed good evolution during the period of hospitalization *progressed favorably while hospitalized*.
- 16) The mean arterial tension *pressure* in operated patients *patients who were operated* on oscillated *ranged* between 65 and 90.
- 17) We did not have money enough to finalize *finish* the third experiment.
- 18) A twenty years old *20-year-old* boy *man* victim of *had multiple injuries from* a motorcycle *accident* crash was hurt in multiple parts of his body.
- 19) The results that we got *obtained* in the last experiment, proved beyond the shadow of a doubt, that our hypotheses were right.
- 20) The program *programme* included a work-shop *workshop* on analysing the aetiology of the diarrhoea. *Or: The program included a work-shop workshop on analysing analyzing the etiology of the diarrhoea diarrhea.*
- 21) Patients with esplenic *splenic* affectation *involvement* should be monitorized *monitored* carefully.
- 22) Treatment consists in *of* watchful waiting and monitorization *monitoring* of evolution *progress*.
- 23) The patient complained about *of reddish-brown* sputum that was reddish-brown in color.
- 24) As the children became younger *The younger the children*, the severity of disease increased *the more severe the disease*.
- 25) The most common pathogenic organism in these settings are *is* Staphylococci *Staphylococcus*.

- 26) We had three ~~hypothesis~~ *hypotheses*: firstly *first*, rats with brain damage would develop lung injury before rats without *brain damage*; second, lung injury in ~~these~~ *brain-damaged* rats would be worse; and last but not least *third*, there will *would* be some other differences in the evolution *outcome* of *between* the two groups of animals.
- 27) However, we examined the anatomic piece *specimen* and found no signs of neoplasia.
- 28) These ~~phenomenon~~ *phenomena* are extremely rare in ~~most cases~~.
- 29) The ~~ethical~~ ethics committee *committee* at our institution gave their approval for the study.
- 30) ~~Due to the fact that~~ *As* we had a lot of *many* false-negative *false-negative* results, our ~~sensibility~~ *sensitivity* was low.
- 31) *We saw a large worm* ~~w~~riggling under the conjunctiva of the patients *patient's* left eye; ~~we saw a large worm~~.
- 32) Shingles ~~are~~ *is* caused by the same viruses ~~as the ones~~ that cause chicken pox *pox*.
- 33) They ~~pretended~~ *aimed* to lower the rate of nosocomial infection four-fold *fourfold*.
- 34) ~~Different from~~ *Unlike* those in the treatment group, ~~at the three months follow-up~~; none of the patients of *in* the control group showed a significant increase of *in* body weight *at the three-month follow-up*.
- 35) ~~A 35% of the procedures~~ *We* performed *35% of the procedures* under local or regional anesthesia.
- 36) ~~It was found that administering~~ *Administering* the drug in fasting patients' *patients* frequently resulted in ~~lost~~ *loss* of consciousness.
- 37) The examination was performed after ~~the subjects had been given~~ *administering* an intravenous contrast agent.
- 38) ~~It has long been known that~~ *Brain* plasticity in the children is greater than in ~~the~~ adults.
- 39) The ~~actual reason~~ *reasons* for these intracellular changes that seem to alter the cells *cell's* ability to regulate calcium intake are poorly known.
- 40) Men like sports more than women *do*.
- 41) Student research grants between \$500 ~~to~~ *and* \$5,000 are available.
- 42) Before cardiac resynchronization therapy for ~~auricular~~ *atrial* flutter, it is important to ~~insure~~ *ensure* >90% biventricular pacing.
- 43) Immunofluorescence ~~allowed to confirm~~ *confirmed* the diagnosis of lupus erythematosus.
- 44) ~~Whether or not colera~~ *cholera* becomes epidemic depends largely of *on* hygiene measures.
- 45) ~~It is well known that~~ *Observational* studies cannot demonstrate causation ~~beyond a shadow of a doubt~~.
- 46) ~~MRI was performed, showing~~ *showed* extensive damage to the intervertebral disc.
- 47) Our results would seem to suggest that our approach might ~~possibly have some~~ *be* usefulness in a carefully selected population.
- 48) Endpoint PCR can only detect ~~10-fold~~ *10-fold* changes on agarose gel.
- 49) ~~Real time~~ *Real-time* PCR can detect ~~two-fold~~ *twofold* changes.
- 50) This poster is Dr. Smith's *Smith's*.
- 51) ~~The secretion of~~ *Proteins* ~~occurs~~ *are secreted* through the exocytosis of membranous vesicles.
- 52) The incidence of AIDS was higher in homosexual men than in ~~normal~~ *heterosexual* men.
- 53) ~~The objective of this work is~~ *We aimed* to determine the effect of diet supplementation with quinine on body weight and body composition in male mice, to investigate its mechanism of action, and *to determine* whether the effect is mediated through Trpm5.

- 54) ~~It is well known that~~ Given a similar dose of ionizing radiation and identical biological characteristics, 9–10 percent **9% to 10%** of normal population have **a** higher (*¿more pronounced?*) radiation response **to radiation**.
- 55) ~~We report the~~ A case of a ~~63-year-old male~~ **63-year-old man** being treated with **undergoing** FOLF-  
OX chemotherapy for stage 3B colorectal cancer, who developed bilateral optic disc edema and  
associated left-sided optic neuropathy ~~is described~~.
- 56) After hydrodissection of the synovial membrane with lidocaine, 80 mg of triamcinolone acetonide  
~~were~~ **was** injected into the knee.
- 57) The treatment ~~lead~~ **led** to a **the** rapid and efficient correction of both clinical symptoms and plasma  
sodium level.
- 58) Most of COPD medications except inhaled muscarinic antagonists were associated with GERD.
- 59) Vitamin D is ~~not only~~ crucial **not only** for bone health but for proper brain development and functioning.
- 60) During treatment or follow-up, 352 patients (20%) ~~showed exitus~~ **died**.
- 61) Different from what occurs **Unlike** in other cells, in neurons small changes in the expression of mem-  
brane receptor proteins can have far-reaching effects on the activity of neural networks.
- 62) It is important to note that ~~Manganese was shown to induce~~ **induced** cell swelling in cultured as-  
trocytes, and that astrocytic **astrocyte** pathology, such as gliosis and Alzheimer type II astrocytes,  
~~were~~ **was** observed in both animal and cell culture models in response to manganese exposures  
**exposure**.  
*The second part of the sentence would probably be better if it were rewritten: and manganese  
exposure caused astrocyte pathology (e.g., gliosis and Alzheimer type II astrocytes) in both ani-  
mal and cell culture models.*
- 63) One of the most popular and versatile model **models** of murine melanoma is **established** by inocu-  
lating B16 cells in the syngeneic C57BL6J mouse strain.
- 64) ~~Irregardless~~ **Regardless** of ~~Despite~~ the fluctuations of **in** the SERS signal from one acquisition to  
another, **we managed to correlate** some bands could still be correlated.
- 65) Looking at **The** overall shape of these spectra, we noticed they resemble well **closely resembled** the  
SERS spectra acquired from ex vivo mice skin tissue samples immersed in colloidal silver solution.
- 66) ~~Beside the cells number~~ **In addition to the number of cells, the concentration of** fetal calf serum  
concentration was also analyzed in each sample.
- 67) AML diagnosis was made **diagnosed using** in accordance with the revised French-American-British  
classification.
- 68) Overexpression of BAD was performed **induced** by transfecting different NSCLC cell lines with wild-  
type BAD.
- 69) A higher number of **More** individuals **in the CD group** were found to present **had** mutations, in the  
CD group and double mutants were only detected **only** in the IBD group.  
*Furthermore, we could make the sentence parallel: Mutations were detected in more individuals  
in the CD group, and double mutants were detected only in the IBD group.*
- 70) Future studies should address **use** a larger sample of patients and controls from different geographical  
regions within the same country and measure **take into account** possible **differences in** environmen-  
tal, **cultural, and dietary** aspects of each **factors among** regions as well as culture and dietary habits.
- 71) ~~There have been some~~ Different opinions **have been expressed** in the published reports **published**  
about the impact of body mass index on outcomes after aortic valve replacement.  
*Although the authors might mean: Different opinions about the impact of body mass index on  
outcomes after aortic valve replacement have been expressed in published reports.*

- 72) The baseline characteristics of experimental and control animals are ~~resumed~~ *summarized* in Table 1.  
*The active voice is shorter and more direct: Table 1 summarizes the baseline...*
- 73) One of the important ~~limitations~~ *limitation* of this study ~~were~~ *was* the absence of physiological data.
- 74) We used the nonparametric Kaplan-Meier method to estimate survival curves and a log-rank test ~~was used~~ to compare survival curves between the two groups.
- 75) ~~In~~ *At* the end of the provisional recruitment period, *only* 23 patients had ~~only~~ been enrolled.
- 76) Only a 15% of the patients ~~was~~ *were* still alive at the end of the follow-up period.
- 77) Idiopathic granulomatous mastitis is a benign lesion with malignant clinical and radiological ~~aspects~~ *appearance*.
- 78) Proteomic investigation of muscle mitochondria revealed *a* decrease of ~~in~~ several flavoenzymes.
- 79) ~~This~~ *These* results suggest that ~~antidepressive~~ *antidepressant* use among individuals without psychiatric diagnoses is common in the United States.
- 80) We received a grant for more than \$2 million ~~dollars~~.
- 81) ~~A number of~~ *(Specify the number)* experimental animals had *higher testosterone* levels of ~~testosterone~~ that were elevated compared to ~~than~~ the control group *mean*.
- 82) Men were more likely to ~~get~~ *have* traumatic lesions than ~~females~~ *women*.
- 83) The ~~eighteen-month-old~~ *eighteen-month-old* babies included in the study all walked toward their mothers.
- 84) Other disease processes involving the dura ~~matter~~ *mater* or subdural space can resemble meningiomas on neuroimaging.
- 85) Cardiac catheterization showed the coronary arteries were all ~~permeable~~ *patent*.
- 86) We investigated the ~~security~~ *safety* and efficacy of the drug in children.
- 87) The decision of if ~~whether~~ to operate or not is decided *made* by the ~~omite~~ *committee*.  
*Or, better in the active voice: The committee decides whether to operate.*
- 88) The ~~maxillar~~ *maxillary* arteries branch from the external carotid artery.
- 89) Improved INR control will improve outcomes for patients treated with warfarin, as it is suggested by the results of the bleeding analyses according to center TTR.
- 90) Either the primary tumor or its metastases are responsible of ~~for~~ the increase of ~~in~~ the marker.
- 91) Rickets most commonly ~~affect~~ *affects* children between the ages of 6 to 24 months.
- 92) The ~~bronchus~~ *bronchi* are lined with ~~mucus~~ *mucous* membranes.
- 93) The patient went ~~in~~ *into* septic shock and was admitted ~~in~~ *to* the ICU.
- 94) Her conclusions were based ~~in~~ *on* faulty premises.
- 95) Our chief, ~~which~~ *who* will give the keynote address at the American congress, is the most well-respected urologist of ~~in~~ the world.
- 96) Her mother was operated *on* for an invasive ductal carcinoma.
- 97) After ~~seeing the number of lesions on the abdominal CT study~~ *revealed numerous lesions*, palliative treatment was decided *recommended*.
- 98) The residents forgot ~~recording~~ *to report* the variable during calls, so there are important gaps in our data.
- 99) We ~~could~~ *were able to* excise the entire tumor and the margins were clean, so the ~~prognostic~~ *prognosis* is good.
- 100) The level of lactate dehydrogenase was ~~found to be~~ elevated.



**EXERCISE 90***Suggested answers*

- 1) **RATIONALE:** Head injury increases early-onset ventilator-associated pneumonia. Although antibiotics can help prevent early-onset pneumonia in these patients, antibiotic prophylaxis is not routinely administered. A single dose of antibiotic immediately after intubation might facilitate routine administration.

**OBJECTIVE:** To evaluate the efficacy of a single dose of antibiotic at intubation against early-onset pneumonia in comatose patients.

**METHODS:** We compared a prospective cohort of comatose patients (Glasgow Coma Score  $\leq 8$ ) admitted in 2009-2010 administered a single dose of antibiotic within 4 hours of intubation with comatose patients without antibiotic prophylaxis (admitted  $\geq 4$  hours after intubation in 2009-2010 or admitted in 2007-2008). We analyzed demographics; comorbidities; cause of coma; incidence of early-onset pneumonia, late-onset pneumonia, and tracheobronchitis; etiology; duration of mechanical ventilation, intensive care stay, and hospital stay; and mortality. Antibiotic prophylaxis effectiveness was estimated by propensity score regression analysis.

**MEASUREMENTS AND MAIN RESULTS:** We included 129 patients (71 in the prophylaxis group and 58 controls). The global incidence of pneumonia and incidence of early-onset pneumonia were lower in the prophylaxis group (10.8 versus 28.4 episodes/1000 days mechanical ventilation;  $p=0.015$ ) and (4.4 versus 23.1 episodes/1000 days mechanical ventilation;  $p=0.02$ ), respectively. The incidence of late-onset pneumonia did not differ. The prophylaxis group tended toward lower incidence of tracheobronchitis (15.5% vs. 25.9%;  $p=0.14$ ). No differences in mortality were found between groups. The prophylaxis group had shorter mechanical ventilation and intensive care unit stay.

**CONCLUSIONS:** A single-dose of antibiotics at intubation lowers the incidence of early-onset pneumonia and shortens mechanical ventilation and intensive care stay.

- 2) **BACKGROUND**

The clinical efficacy of allergen immunotherapy relies on patients' perceptions because no objective measurement is available. The fraction of exhaled nitric oxide (FENO) may be indicative of the severity of allergic rhinitis. We aimed to determine whether FENO is affected by multiple allergen immunotherapy in polysensitized adult subjects with allergic rhinitis. We also analyzed whether FENO was associated with demographics, symptom scores, or pulmonary function tests.

**METHODS**

We evaluated 20 polysensitized adults with seasonal or perennial allergic rhinitis before starting allergen immunotherapy and 4, 8, 12, 24, and 52 weeks later. FENO was reported as the mean of triplicate determinations.

**FINDINGS**

Multiple allergen immunotherapy did not affect FENO. FENO did not correlate with demographics or pulmonary function tests. However, FENO was associated with rhinoconjunctivitis and asthma symptom scores at the end of the study.

**CONCLUSIONS**

In polysensitized adult subjects with allergic rhinitis, FENO are unaffected by multiple allergen immunotherapy.

- 3) **BACKGROUND**

Acute pharyngitis is common in primary care. Acute viral pharyngitis is often misdiagnosed as acute bacterial pharyngitis. Laboratory-confirmed diagnosis of respiratory viruses is recommended. We aimed to compare the sensitivities of TaqMan real-time polymerase chain reaction (RT-PCR) for

detecting respiratory viruses in specimens obtained from adults with acute pharyngitis by three techniques (oropharyngeal swab, nasopharyngeal swab, and nasal wash).

#### METHODS

Triple samples (oropharyngeal swab, nasopharyngeal swab, and nasal wash specimens) were obtained from consecutive adults with acute pharyngitis. We used TaqMan RT-PCR to test specimens for 15 respiratory viruses. Samples were considered true positives when any specimen was positive for any virus. Sensitivities of specimen types were compared using the chi-square test or Fisher's exact test, as appropriate.

#### RESULTS

We obtained 103 consecutive triple samples. In 73 patients, at least one virus was detected in at least one specimen. Overall, sensitivity was significantly higher for nasopharyngeal swab specimens than for nasal wash (74% vs. 49%, respectively;  $p < 0.01$ ) and oropharyngeal swab (74% vs. 49%, respectively;  $p < 0.01$ ).

#### CONCLUSIONS

In adults with acute pharyngitis, TaqMan RT-PCR for the detection of respiratory viruses was more sensitive on nasopharyngeal swab specimens than on nasal wash and oropharyngeal swab specimens.