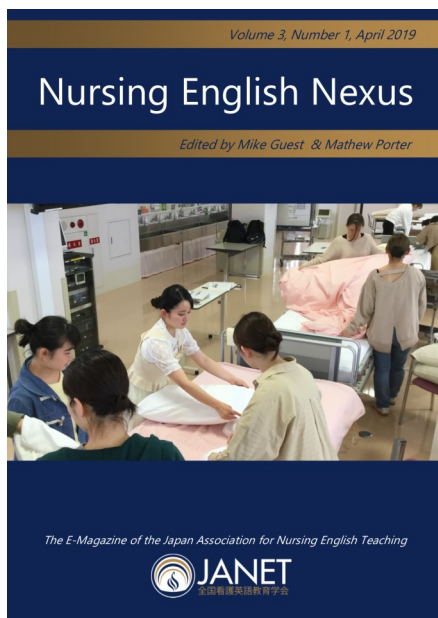


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Development of a Vocabulary List for Nursing Students

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Abstract: Nurses in Japan need a basic knowledge of common English health terms, which are understood by the general English-speaking population rather than being specific to the medical profession. This article describes the development of a 314-word Nursing Vocabulary List (NVL) designed for such a purpose (Appendix A). The list was analyzed for lexical frequency, finding that 44.6% fell within the 2000 most frequently used words, plus the Academic Word List. Examples of 18 activities that could be used for teaching and/or assessment of vocabulary learning from the NVL are also included.

Keywords: Nursing, health, vocabulary, list

Vocabulary is the foundation of any language, upon which most communication is based, whether through speaking-listening, or writing-reading. Most topics have vocabulary items specific to their theme, which are particularly relevant to many English for Special Purposes (ESP) curricula. This report details the development of a vocabulary learning program for nursing students, including the creation of a 314-item Nursing Vocabulary List (NVL) (Appendix A).

Literature Review

Within any given language, some words are naturally more frequent than others, and so vocabulary has been classified as being made up of high-, mid-, or low-frequency words (Webb & Nation, 2017, p.6). For the English language, many researchers have produced various lists of word frequency (Webb & Nation, 2017, p.10). The grandfather of such lists is West's (1953) General Service List (GSL), comprising the 2000 most frequent word families. One of the most prominent lists was recently developed by Paul Nation (2012), based on the British National Corpus/Corpus of Contemporary American English (BNC/COCA), which consists of vocabulary from both spoken and written English in the UK and USA. The BNC/COCA list is sub-divided into 1000-word levels for the 25,000 most common English word families, but of most value are the first two 1000-word levels, as these 2000 most frequent

word families have been found to account for around 90% of lexical coverage in conversation (89.4%), lectures (89.6%), TV programs (89.5%), films (90.7%), and novels (87-92%), as well as 82-84% of newspapers (Webb & Nation, 2017, p.11). The third 1000-word level adds only 2-5% more lexical coverage, depending on the spoken or written context, while the 2000 words of both the 4th and 5th levels combined would add only 3% more coverage (Nation, 2006). These diminishing returns in lexical coverage are explained by Zipf's law, named after the psycholinguist who discovered that, "the most frequent word [*the*, comprising 7% of all running words] was about twice as frequent as the next most frequent word family [*be*], approximately three times as frequent as the next most frequent word [*to*], and so on" (Webb & Nation, 2017, p.286).

In addition to the BNC/COCA lists, another important word list is the Academic Word List (AWL), which identifies 570 word families that account for approximately 10% of all words in a corpus of 414 written academic texts comprising 3.5 million running words (Coxhead, 2000). Most of the AWL are mid-frequency words (and exclude any of the first level of 2000 words), so after learning the first 2000 most frequent words, the next step for English learners (especially those with academic goals) is to learn these 570 word families which were gleaned from 28 different subject areas across four disciplines: arts,

commerce, law, and science (Nation, 2008, p.125). Learning this list would also add around 4% to coverage of the running words in newspapers (Nation, 2013, p.95), thus lifting its overall coverage to around 87%, which approaches the figures given above for conversation, lectures, novels, TV shows, and movies. The AWL is often included, along with the first 2000 word families, in vocabulary analysis computer programs that provide the lexical composition of any chosen text.

A third important category of vocabulary frequency is that of technical vocabulary, which are the particular words that occur frequently only within a specific subject. From pop songs to cooking to sports to rocket science, any given topic has its own technical vocabulary, which often runs into thousands of words. The medical field has over 10,000 technical vocabulary words (Nation, 2008, p.135). Technical vocabulary is often low-frequency, but some could also be at high- or mid-frequency word levels. Technical vocabulary might also be included in academic word lists, as these words are often learned in the academic context of studying a particular discipline.

For nursing purposes, two lists of related academic vocabulary are available. First, the Medical Academic Vocabulary List (MAVL) consists of 819 lemmas (a headword and its inflections) based on a combination of a 2.7 million-word corpus of medical academic English, and a 3.5 million-word corpus of medical English textbooks (Lei & Liu, 2016). Second is the Nursing Academic Word List (NAWL), which lists 676 word families, and covers 13.64% of the Nursing Research Articles Corpus (NRAC), consisting of just over 1 million running words from 252 articles in nursing research publications (Yang, 2015). These lists were not chosen for my own vocabulary-learning program because they are 1) too large for practical use in this program (more than double the 314-item NVL), and, 2) based on

academic research publications, which is generally beyond the purview and proficiency level of nursing students learning English in Japan. In other words, both the MAVL and the NAWL are too large, as well as too focused on academic research vocabulary, than the practical nursing vocabulary that I wanted my students to learn. A comparison of the NVL with Yang's NAWL identified 110 concurrent items, which account for 16.2% of the NAWL. A similar comparison of the NVL with the MAVL found 126 concurrent items, accounting for 15.4% of that list.

Teaching Context

Due to my context of teaching English to 2nd year university nursing students, I decided to develop a vocabulary-learning program, which in turn led to the creation of my own list of technical vocabulary for nurses, hereafter dubbed as the Nursing Vocabulary List (NVL). The textbook I chose for my classes was *Healthtalk: Health Awareness and English Conversation* (McBean, 2014), which is a content-based communicative EFL text written for Japanese university students. It contains 12 units based on topics such as exercise, smoking, alcohol, cancer, obesity, depression, stress, AIDS, and dental care. Although *Healthtalk* is at an appropriate level for first- or second-year nursing students' English proficiency, I felt that it was too general with regard to nursing vocabulary, and began to consider more useful and appropriate nursing vocabulary that I believed nurses should learn in English. The next section explains the genesis, design, and a description of the NVL.

Design and Description of the Nursing Vocabulary List (NVL)

The 314-word NVL was developed over a number of stages:

1. First I brainstormed a list of body parts, going from head to toe, including major organs, and came up with 48 items.
2. Next I brainstormed a list of hospital departments, and then supplemented it by

- checking the *Netdoctor* web page (Henderson, 2016) for an A to Z of hospital departments, coming up with 32 items.
3. Then I brainstormed a list of 60 commonly known health terms (based on daily life and my own hospital stays), and supplemented it with another 60 items from the glossary of *Healthtalk*, which brought the NVL to 200 items.
 4. When researching mobile-phone flashcard applications such as *Quizlet* and *iKnow!*, I came across some sets with medical terminology worth including, such as wound and tumor. Sixteen items were added at this stage, bringing the total to 216 items thus far.
 5. After comparisons with the MAVL and the NAWL, an additional 98 items were added from both, for a final tally of 314 items on the NVL.

The words chosen for the NVL conform to Step 3 of the four-step rating scale for technical vocabulary as proposed by Chung and Nation (2003, p. 105). That is, words that are closely related to the nursing field, but not too technical, such as Step 4 terms *cranium* or *thorax*, nor too general, such as Step 2 words *normal* or *part*, and also not words that are independent of the subject matter, such as Step 1 terms *amount* or *adult/child*, or function words. Although this vocabulary list is not based on the corpus-comparison approach (i.e. comparing a nursing-based text with a broader-based corpus such as BNC/COCA), a brief scan by any native English speaker would find few if any unknown words, and the list is based on real-world experiences and common knowledge, supplemented by the research listed earlier, resulting in a list of very relevant vocabulary for nursing students to learn in English. The total number of items in the NVL thus stands at 314.

Having generated the NVL over numerous iterations, it was then analyzed by frequency, in order to determine which words are worth

learning first. For this, the NVL was run through both Lawrence Anthony's *AntWordProfiler* program and Tom Cobb's *VocabProfile* website, which gave similar results (Appendix B). To summarize the analysis, the NVL was comprised of 16% level 1 words, 19% level 2 words, and 9% of the AWL, accounting for a total of 44.6% of the NVL. The remaining 55.4% were beyond the first 2000+AWL levels, which would be expected of a technical word list. Curiosity about the frequency levels of the 55% off-list words led to a comparison with the entirety of 34 lists developed by Nation. This analysis is also included in Appendix B.

Assessment of Vocabulary Learning

To establish a baseline assessment, the entire NVL would be presented, with students asked to mark each item/word on the following scale:

- 0: I don't know the word at all.
- 1: I have seen the word before, but don't know the meaning.
- 2: I have seen the word before, and think I know the meaning.
- 3: I know what it means in Japanese.
- 4: I can use this word in an English sentence.
- 5: I can give its meaning in English.

As 35% of the NVL falls within the first 2000 words, it would be expected that the students already know about a third of the list, or around 100 of the 314 items. Students would then be told to study the unknown words on their own, using self-made word cards.

To check the progress of students' learning of the items on the NVL, various assessment methods could (and should) be used, which would range from receptive recognition and recall, to productive elaboration and use. While most assessments are done with paper-based worksheets, many of the examples listed below can be performed orally, with a fairly quick and easy five or ten point quiz at the end of a vocabulary session. Although most of the 18 assessment

samples listed below would be given throughout the course in worksheet form (or else performed orally), most could easily be scored for grading purposes.

1. True/False statements, which could be done orally as well as in writing:

An eye doctor is called an ophthalmologist.

The intestines process the air that we breathe.

2. Multiple-choice questions (which also could be performed orally or in writing):

A heart doctor is called a(n): a) oncologist

b) neurologist c) cardiologist.

For an extra challenge, students could spell the answer, rather than choose a, b, or c.

3. Definition Matching (levels matching test): Which of the above three choices (a, b, c) match with these three definitions:

1) heart doctor 2) cancer doctor 3) brain doctor.

4. Fill-in-the blanks (productive levels test): This could be performed either with choices given in a word bank (for difficult words), or without any choices for easier words. For a wider variety of usage, inflections and derivations could also be used.

Ray had an _____ to remove his appendix. (operation)

Ray ate some old sushi and got a _____. (stomachache)

5. Word associates, connecting words from two lists could also be performed orally. In this activity the teacher supplies the first word, and the students must add the collocation:

heart – attack, blood – pressure, nasal – congestion, cardiac – arrest, allergic – reaction, life – expectancy, immune – system, etc.

This could also be done with synonyms (*shot – injection, fluid – liquid, broken – fractured*, etc.) or antonyms (*injured – healed, heatstroke – hypothermia, physical – mental*, etc.)

6. As a more receptive variation of the above, identify the misfit in a set of words:

wheelchair / crutches / walker / cane/ fever

Infection / antibiotics / medicine / prescription / drug

7. As a more productive variation of the above two exercises, students could be given a

prompt, such as *cancer*, and try to provide some associated words, such as *tumor, oncology, or chemotherapy*.

8. Listen and fill-in the missing words, or listen and answer questions. Again, choices could be given for harder words with low frequency (the off-list words of the NVL), or choices not given for easier words of higher frequency (the level 1 or 2 words of the NVL).
9. Same as above, except with the input introduced from reading rather than listening.
10. Peer testing of word cards, in which partners quiz each other using their own flashcards (Nation, 2008, p. 147).
11. Translate the Japanese kanji of a word into English.
12. Identify the part of speech of a word, and give its derivations:
operation (n.), operate (v.), operating room (adj.).
13. Write (or give orally) a definition in English of a word. For this I use the higher frequency words of levels 1 and 2 on the NVL.
14. Use the word in a sentence that makes clear its meaning. This could be performed orally (and used in games such as bingo or tic-tac-toe), or in writing. Again, such productive assessment would be more suitable for the higher frequency items on the NVL.
15. Definition completion, which also could be performed orally:
The joint in the middle of one's arm is called our _____.
16. Forced choice, which also could be performed orally: Which sentence is correct?
A dehydrated person needs to drink water.
A dehydrated person needs to take a pain killer.
17. Pronunciation assessment: Can students produce these words in speech properly?
hypothermia, mucus, chemotherapy, syringe, obesity, diabetes
18. Students record a video of their hospital experience stories for speaking fluency assessment.

Conclusion

The author created a vocabulary list for EFL nursing students in Japan, which resulted in the development of the 314-item NVL, a list of the most useful technical nursing vocabulary for EFL learners. Various assessment activities are suggested that could be used to track learner progress and/or scoring achievement based on the list. These 18 example activities would be expected to fully engage nursing students and result in successful English vocabulary development. Having created the NVL, the next step is to design an accompanying teaching program involving various vocabulary activities.

For future research, it would be interesting to determine what percentage of the 314 items on the NVL are already known by most nursing students (such as most of the body parts sub-list), and how many new items could be learned after engaging in various vocabulary development activities, such as those presented in the assessment section above. A pretest-posttest study of NVL acquisition would be a further step for future research, in addition to refinement of the NVL based on stakeholder and student feedback, as well as the learning that results from its implementation.

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Appendix A: The Nursing Vocabulary List (NVL)

- | | | | |
|-----------------------|--------------------------|------------------------------------|--------------------------------|
| 1. Ankle | 51. Throat | 99. Alzheimer's | 147. Damage |
| 2. Arm | 52. Waist | 100. Ambulance | 148. Data |
| 3. Back | 53. Wrist | 101. Antibiotics | 149. Death |
| 4. Belly button | | 102. Antibodies | 150. Degrees |
| 5. Brain | 54. Anesthetic | 103. Antiseptic | 151. Dehydrated |
| 6. Bladder | 55. Burn Unit | 104. Artery | 152. Dementia |
| 7. Blood | 56. Cardiology | 105. Asthma | 153. Depression |
| 8. Bones | 57. Dermatology | 106. Bacteria | 154. Diabetes |
| 9. Butt (bottom, ass) | 58. Ears, Nose, & Throat | 107. Bandage | 155. Diagnosis |
| 10. Calf | 59. Endoscopy | 108. Band aid | 156. Diarrhea |
| 11. Cheek | 60. Emergency Room | 109. Benign | 157. Disease |
| 12. Chest | 61. Gastroenterology | 110. Biochemical | 158. Disorder |
| 13. Chin | 62. General Surgery | 111. Biopsy | 159. Dizzy |
| 14. Ears | 63. Geriatrics | 112. Bleeding | 160. Drug Overdose |
| 15. Elbow | 64. Gynecology | 113. Blood Pressure | 161. Drunk |
| 16. Eyes | 65. Hematology | 114. Blood Transfusion | 162. Effect |
| 17. Finger | 66. Intensive Care Unit | 115. Bowel Movement | 163. Epidemic |
| 18. Foot | 67. Maternity | 116. Breast (feeding) | 164. Examination |
| 19. Forehead | 68. Microbiology | 117. Breathing | 165. External |
| 20. Gallbladder | 69. Neonatal | 118. Cancer | 166. Fart (pass gas) |
| 21. Genitals | 70. Nephrology | 119. Cane | 167. Fatal |
| 22. Hand | 71. Neurology | 120. Cardiac Arrest (heart attack) | 168. Fatigue |
| 23. Head | 72. Obstetrics | 121. Caregiver | 169. Female |
| 24. Heart | 73. Occupational Therapy | 122. Cast | 170. Fever |
| 25. Heel | 74. Oncology | 123. Cause | 171. Flu (influenza) |
| 26. Hip | 75. Ophthalmology | 124. Cells | 172. Fluid (liquid) |
| 27. Intestines | 76. Orthopedic | 125. Chart | 173. Follow-up |
| 28. Kidneys | 77. Pain Management | 126. Checkup | 174. Fractured (broken) |
| 29. Knee | 78. Pediatric | 127. Chemotherapy | 175. Function |
| 30. Leg | 79. Pharmacy | 128. Chicken pox | 176. Gauze |
| 31. Lip | 80. Psychiatry | 129. Choking | 177. Genetic |
| 32. Liver | 81. Physiotherapy | 130. Cholesterol | 178. Germs |
| 33. Lungs | 82. Radiotherapy | 131. Chronic | 179. Glucose |
| 34. Mouth | 83. Rheumatology | 132. Circulation | 180. Headache |
| 35. Muscles | 84. Sexual Health | 133. Clinic | 181. Heal |
| 36. Nails | 85. Urology | 134. Cold | 182. Heatstroke |
| 37. Neck | | 135. Colleagues (coworkers) | 183. Height |
| 38. Nerves | 86. Abdominal pain | 136. Colon | 184. HIV |
| 39. Nose | 87. Abnormal | 137. Coma | 185. Hormone |
| 40. Pancreas | 88. Abuse | 138. Conscious | 186. Hospital |
| 41. Ribs | 89. Accident | 139. Constipation | 187. Hurt |
| 42. Shoulder | 90. Ache | 140. Consult | 188. Hypertension |
| 43. Skin | 91. Acute | 141. Coronary | 189. Hypothermia |
| 44. Skull | 92. Addiction | 142. Coughing | 190. Illness (sickness) |
| 45. Sole | 93. AED | 143. CPR | 191. Immune System |
| 46. Stomach | 94. Aged (elderly) | 144. Critical Condition | 192. Indigestion (stomachache) |
| 47. Thigh | 95. Aid | 145. Crutches | 193. Infant |
| 48. Thumb | 96. AIDS | 146. Cure | 194. Infection |
| 49. Toe | 97. Allergic Reaction | | 195. Inflammation |
| 50. Tooth (teeth) | 98. Alleviate | | |

- | | | |
|--|------------------------------------|--------------------|
| 196. Injection (shot) | 247. Prescription | 298. Tumor |
| 197. Injury | 248. Procedure | 299. Ulcer |
| 198. Inpatient | 249. Prognosis | 300. Ultrasound |
| 199. Insulin | 250. Prostate | 301. Unconscious |
| 200. Intravenous (IV) | 251. Psychological (mental) | 302. Undergo |
| 201. Invasive | 252. PTSD | 303. Underweight |
| 202. Iodine | 253. Pulmonary | 304. Unhealthy |
| 203. Irritation | 254. Pulse | 305. Urinate (pee) |
| 204. Laboratory | 255. Rash | 306. Vaccine |
| 205. Lesion | 256. Recovery | 307. Vein |
| 206. Life Expectancy | 257. Recurrence | 308. Virus |
| 207. Limb | 258. Reduce | 309. Vomiting |
| 208. Male | 259. Rehabilitation | 310. Walker |
| 209. Malignant | 260. Relieve | 311. Weight |
| 210. Maximum | 261. Renal | 312. Wheelchair |
| 211. Measles | 262. Respiration | 313. Wound |
| 212. Medicine | 263. Risk Factor | 314. X-ray |
| 213. Menstrual | 264. Sample | |
| 214. Metabolism | 265. Scab | |
| 215. Midwife | 266. Sensitive | |
| 216. Minimum | 267. Shot (injection) | |
| 217. Moderate | 268. Sick (ill) | |
| 218. MRI | 269. Slurring | |
| 219. Mucus | 270. Sneezing | |
| 220. Mumps | 271. Sore | |
| 221. Nasal Congestion
(stuffy nose) | 272. Specimen | |
| 222. Nausea | 273. Spinal | |
| 223. Needle | 274. Sprained | |
| 224. Negative | 275. Stable | |
| 225. Numb | 276. Standard (normal,
regular) | |
| 226. Nurse | 277. Sterile | |
| 227. Obesity | 278. Stethoscope | |
| 228. Onset | 279. Stimulate | |
| 229. Operation | 280. Strain | |
| 230. Oral | 281. Stress | |
| 231. Organ Failure | 282. Stretcher | |
| 232. Outpatient | 283. Stroke | |
| 233. Overweight | 284. Suffer (from) | |
| 234. Pain (killer) | 285. Survive | |
| 235. Paralyzed | 286. Swollen | |
| 236. Pathology | 287. Symptoms | |
| 237. Patient | 288. Syndrome | |
| 238. Pharmacology | 289. Syringe | |
| 239. Physical | 290. Temperature | |
| 240. Physician (doctor) | 291. Test Results | |
| 241. Pill (tablet, capsule) | 292. Therapy | |
| 242. Pneumonia | 293. Tissue | |
| 243. Poison | 294. Toothache | |
| 244. Positive | 295. Toxic | |
| 245. Pregnant | 296. Trauma | |
| 246. Premature | 297. Treatment | |

Appendix B: Analysis of the Nursing Vocabulary List (NVL)

Families Types Tokens Percent

K1 Words (1-1000): 48 50 57 16.29%

Function: (1) (0.29%)

Content: (56) (16.00%)

> Anglo-Sax (30) (8.57%)

K2 Words (1001-2000): 60 63 67 19.14%

> Anglo-Sax (36) (10.29%)

1k+2k (35.43%)

AWL Words: 30 32 32 9.14%

> Anglo-Sax (1) (0.29%)

Off-List Words: ? 192 194 55.43%

138+? 337 350 100%

1k types [48 families: 50 types: 57 tokens]: aged_[1] arm_[1] attack_[1] back_[1] bleeding_[1] blood_[3] broken_[2] burn_[1] care_[1] cause_[1] cold_[1] condition_[1] death_[1] degrees_[1] doctor_[1] drunk_[1] ears_[2] effect_[1] expectancy_[1] eyes_[1] failure_[1] feeding_[1] follow_[1] gas_[1] general_[1] hand_[1] head_[1] heart_[2] ill_[1] illness_[1] killer_[1] life_[1] mouth_[1] movement_[1] operation_[1] pass_[1] pressure_[1] reduce_[1] results_[1] room_[1] sensitive_[1] shot_[2] shoulder_[1] standard_[1] stroke_[1] system_[1] test_[1] unit_[2] up_[1] wound_[1]

First 500 (16 tokens): aged back condition death effect expectancy eyes follow general hand head life movement results room system

Second 500 (40 tokens): arm attack bleeding blood blood blood broken broken burn care cause cold degrees doctor drunk ears ears failure feeding gas heart heart ill illness killer mouth operation pass pressure reduce sensitive shot shot shoulder standard stroke test unit unit wound

2k types [60:63:67]: accident_[1] ache_[1] arrest_[1] bones_[1] bottom_[1] brain_[1] breathing_[1] chest_[1] conscious_[1] coughing_[1] critical_[1] cure_[1] damage_[1] disease_[1] elderly_[1] examination_[1] female_[1] fever_[1] finger_[1] foot_[1] heal_[1] health_[1] hospital_[1] hurt_[1] knee_[1] leg_[1] limb_[1] liquid_[1] lungs_[1] male_[1] management_[1] medicine_[1] moderate_[1] nails_[1] neck_[1] needle_[1] nose_[3] nurse_[1] organ_[1] pain_[2] patient_[1] poison_[1] regular_[1] relieve_[1] risk_[1] sample_[1] sick_[1] sickness_[1] skin_[1] sore_[1] stomach_[1] swollen_[1] teeth_[1] temperature_[1] throat_[2] thumb_[1] toe_[1] tooth_[1] treatment_[1] unconscious_[1] waist_[1] weight_[1] wrist_[1]

AWL [30:32:32]: abnormal_[1] aid_[1] aids_[1] chart_[1] colleagues_[1] consult_[1] data_[1] depression_[1] external_[1] factor_[1] function_[1] injury_[1] intensive_[1] interaction_[1] maximum_[1] mental_[1] minimum_[1] negative_[1] normal_[1] occupational_[1] physical_[1] positive_[1] procedure_[1] psychological_[1] reaction_[1] recovery_[1] sexual_[1] sole_[1] stable_[1] stress_[1] survive_[1] undergo_[1]

OFF types [?:192:194]: abuse_[1] acute_[1] addiction_[1] aed_[1] allergic_[1] alleviate_[1] alzheimer_[1] ambulance_[1] anesthetic_[1] ankle_[1] antibiotics_[1] antibodies_[1] antiseptic_[1] artery_[1] ass_[1] asthma_[1] bacteria_[1] bandage_[1] benign_[1] biochemical_[1] biopsy_[1] bladder_[1] bowel_[1] breast_[1] butt_[1] calf_[1] cancer_[1] cane_[1] cardiac_[1] cardiology_[1] caregiver_[1] cells_[1] checkup_[1] chemotherapy_[1] choking_[1] cholesterol_[1] chronic_[1] circulation_[1] clinic_[1] colon_[1] coma_[1] congestion_[1] coronary_[1] coworkers_[1] cpr_[1] crutches_[1] dehydrated_[1] dementia_[1] dermatology_[1] diabetes_[1] diagnosis_[1] diarrhea_[1] disorder_[1] drug_[1] elbow_[1] emergency_[1] emphysema_[1] endoscopy_[1] epidemic_[1] fart_[1] fatal_[1] fatigue_[1] flu_[1] fluid_[1] forehead_[1] fractured_[1] gallbladder_[1] gastroenterology_[1] genetic_[1] genitals_[1] geriatrics_[1] germs_[1] glucose_[1] gynecology_[1] headache_[1] heatstroke_[1] heel_[1] height_[1] hematology_[1] hip_[1] hiv_[1] hormone_[1] hypertension_[1] hypothermia_[1] immune_[1] indigestion_[1] infant_[1] infection_[1] inflammation_[1] injection_[2] inpatient_[1] insulin_[1] intestines_[1] intravenous_[1] invasive_[1] iodine_[1] irritation_[1] kidneys_[1] laboratory_[1] lesion_[1] liver_[1] malignant_[1] maternity_[1] menstrual_[1] metabolism_[1] microbiology_[1] midwife_[1] mri_[1] mucus_[1] muscles_[1] nasal_[1] nausea_[1] neonatal_[1] nephrology_[1] nerves_[1] neurology_[1] obesity_[1] obstetrics_[1] oncology_[1] onset_[1] ophthalmology_[1] oral_[1] orthopedic_[1] outpatient_[1] overdose_[1] overweight_[1] pancreas_[1] paralyzed_[1] pathology_[1] pediatric_[1] pee_[1] pharmacology_[1] pharmacy_[1] physician_[1] physiotherapy_[1] pill_[1] pneumonia_[1] pregnant_[1] premature_[1] prescription_[1] prognosis_[1] prostate_[1] psychiatry_[1] ptsd_[1] pulmonary_[1] pulse_[1] radiotherapy_[1] rash_[1] recurrence_[1] rehabilitation_[1] renal_[1] respiration_[1] rheumatology_[1] scab_[1] scan_[1] skull_[1] slurring_[1] sneezing_[1] specimen_[1] spinal_[1] sprained_[1] sterile_[1] stimulate_[1] stomachache_[1] strain_[1] stretcher_[1] stuffy_[1] surgery_[1] symptoms_[1] syndrome_[1] syringe_[1] therapy_[2] thigh_[1] tissue_[1] toothache_[1] toxic_[1] transfusion_[1] trauma_[1] tumor_[1] ulcer_[1] ultrasound_[1] underweight_[1] unhealthy_[1] urinate_[1] urology_[1] vaccine_[1] vein_[1] virus_[1] vomiting_[1] walker_[1] wheelchair_[1] xray_[1]

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