

SECTION III

Sub Section III-A: Number of Questions = 45

PASSAGE IV

Throughout human history the leading causes of death have been infection and trauma. Modern medicine has scored significant victories against both, and the major causes of ill health and death are now the chronic degenerative diseases, such as coronary artery disease, arthritis, osteoporosis, Alzheimer's, macular degeneration, cataract and cancer. These have a long latency period before symptoms appear and a diagnosis is made. It follows that the majority of apparently healthy people are pre-ill.

But are these conditions inevitably degenerative? A truly preventive medicine that focused on the pre-ill, analysing the metabolic errors which lead to clinical illness, might be able to correct them before the first symptom. Genetic risk factors are known for all the chronic degenerative diseases, and are important to the individuals who possess them. At the population level, however, migration studies confirm that these illnesses are linked for the most part to lifestyle factors—exercise, smoking and nutrition. Nutrition is the easiest of these to change, and the most versatile tool for affecting the metabolic changes needed to tilt the balance away from disease.

Many national surveys reveal that malnutrition is common in developed countries. This is not the calorie and/or micronutrient deficiency associated with developing nations (Type A malnutrition); but multiple micronutrient depletion, usually combined with caloric balance or excess (Type B malnutrition). The incidence and severity of Type B malnutrition will be shown to be worse if newer micronutrient groups such as the essential fatty acids, xanthophylls and flavonoids are included in the surveys. Commonly ingested levels of these micronutrients seem to be far too low in many developed countries.

There is now considerable evidence that Type B malnutrition is a major cause of chronic degenerative diseases. If this is the case, then it is logical to treat such diseases not with drugs but with multiple micronutrient repletion, or "pharmaco-nutrition". This can take the form of pills and capsules—'nutraceuticals', or food formats known as 'functional foods'. This approach has been neglected hitherto because it is relatively unprofitable for drug companies—the products are hard to patent—and it is a strategy which does not sit easily with modern medical interventionism. Over the last 100 years, the drug industry has invested huge sums in developing a range of subtle and powerful drugs to treat the many diseases we are subject to. Medical training is couched in pharmaceutical terms and this approach has provided us with an exceptional range of therapeutic tools in the treatment of disease and in acute medical emergencies. However, the pharmaceutical model has also created an unhealthy dependency culture, in which relatively few of us accept responsibility for maintaining our own health. Instead, we have handed over this responsibility to health professionals who know very little about health maintenance, or disease prevention.

One problem for supporters of this argument is lack of the right kind of hard evidence. We have a wealth of epidemiological data linking dietary factors to health profiles / disease risks, and a great deal of information on mechanism: how food factors interact with our biochemistry. But almost all intervention studies with micronutrients, with the notable exception of the omega 3 fatty acids, have so far produced conflicting or negative results. In other words, our science appears to have no predictive value. Does this invalidate the science? Or are we simply asking the wrong questions?

Based on pharmaceutical thinking, most intervention studies have attempted to measure the impact of a single micronutrient on the incidence of disease. The classical approach says that if you give a compound formula to test subjects and obtain positive results, you cannot know which ingredient is exerting the benefit, so you must test each ingredient individually. But in the field of nutrition, this does not work. Each intervention on its own will hardly make enough difference to be measured. The best therapeutic

response must therefore combine micronutrients to normalise our internal physiology. So do we need to analyse each individual's nutritional status and then tailor a formula specifically for him or her? While we do not have the resources to analyse millions of individual cases, there is no need to do so. The vast majority of people are consuming suboptimal amounts of most micronutrients, and most of the micronutrients concerned are very safe. Accordingly, a comprehensive and universal program of micronutrient support is probably the most cost-effective and safest way of improving the general health of the nation.

111. Type-B malnutrition is a serious concern in developed countries because

1. developing countries mainly suffer from Type-A malnutrition.
2. it is a major contributor to illness and death.
3. pharmaceutical companies are not producing drugs to treat this condition.
4. national surveys on malnutrition do not include newer micronutrient groups.

Sol. Ans.(2). Option (2), manifested in the opening and fourth paragraphs of the passage, depicts the reason for the Type-B malnutrition as a serious concern in developed countries. Options (1), (3) and (4) are irrelevant in the given context. Hence, option (2) is the correct option.

112. Why are a large number of apparently healthy people deemed pre-ill?

1. They may have chronic degenerative diseases.
2. They do not know their own genetic risk factors which predispose them to diseases.
3. They suffer from Type-B malnutrition.
4. There is a lengthy latency period associated with chronically degenerative diseases.

Sol. Ans.(4). The opening paragraph of the passage manifests option (4), which serves as the reason for a large number of apparently healthy people deemed pre-ill. Options (1), (2) and (3) are irrelevant in the given context. Hence, option (4) is the correct option.

113. The author recommends micronutrient-repletion for large-scale treatment of chronic degenerative diseases because

1. it is relatively easy to manage.
2. micronutrient deficiency is the cause of these diseases.
3. it can overcome genetic risk factors.
4. it can compensate for other lifestyle factors.

Sol. Ans.(1). The last paragraph of the passage depicts option (1) as the reason for the author recommending micronutrient-repletion for large-scale treatment of chronic degenerative diseases. Options (2), (3) and (4) are irrelevant in the given context. Hence, option (1) is the correct option.

114. Tailoring micronutrient-based treatment plans to suit individual deficiency profiles is not necessary because

1. it very likely to give inconsistent or negative results.
2. it is a classic pharmaceutical approach not suited to micronutrients.
3. most people are consuming suboptimal amounts of safe-to-consume micronutrients.
4. it is not cost effective to do so.

Sol. Ans.(3). Option (3), manifested in the last paragraph of the passage, depicts the reason that why tailoring micronutrient-based treatment plans to suit individual deficiency profiles is not necessary. Options (1), (2) and (4) are irrelevant in the given context. Hence, option (3) is the correct option.

This passage was relatively easier to solve.

PASSAGE V

Fifty feet away three male lions lay by the road. They didn't appear to have a hair on their heads. Noting the color of their noses (leonine noses darken as they age, from pink to black), Craig estimated that they were six years old—young adults. "This is wonderful!" he said, after staring at them for several moments. "This is what we came to see. They really are maneless." Craig, a professor at the University of Minnesota, is arguably the leading expert on the majestic Serengeti lion, whose head is mantled in long, thick hair. He and Peyton West, a doctoral student who has been working with him in Tanzania, had never seen the Tsavo lions that live some 200 miles east of the Serengeti. The scientists had partly suspected that the maneless males were adolescents mistaken for adults by amateur observers. Now they knew better.

The Tsavo research expedition was mostly Peyton's show. She had spent several years in Tanzania, compiling the data she needed to answer a question that ought to have been answered long ago: Why do lions have manes? It's the only cat, wild or domestic, that displays such ornamentation. In Tsavo she was attacking the riddle from the opposite angle. Why do its lions not have manes? (Some "maneless" lions in Tsavo East do have partial manes, but they rarely attain the regal glory of the Serengeti lions'.) Does environmental adaptation account for the trait? Are the lions of Tsavo, as some people believe, a distinct subspecies of their Serengeti cousins?

The Serengeti lions have been under continuous observation for more than 35 years, beginning with George Schaller's pioneering work in the 1960s. But the lions in Tsavo, Kenya's oldest and largest protected ecosystem, have hardly been studied. Consequently, legends have grown up around them. Not only do they look different, according to the myths, they *behave* differently, displaying greater cunning and aggressiveness. "Remember too," Kenya: *The Rough Guide* warns, "Tsavo's lions have a reputation of ferocity." Their fearsome image became well-known in 1898, when two males stalled construction of what is now Kenya Railways by allegedly killing and eating 135 Indian and African laborers. A British Army officer in charge of building a railroad bridge over the Tsavo River, Lt. Col. J. H. Patterson, spent nine months pursuing the pair before he brought them to bay and killed them. Stuffed and mounted, they now glare at visitors to the Field Museum in Chicago. Patterson's account of the leonine reign of terror, *The Man-Eaters of Tsavo*, was an international best-seller when published in 1907. Still in print, the book has made Tsavo's lions notorious. That annoys some scientists. "People don't want to give up on mythology," Dennis King told me one day. The zoologist has been working in Tsavo off and on for four years. "I am so sick of this man-eater business. Patterson made a helluva lot of money off that story, but Tsavo's lions are no more likely to turn man-eater than lions from elsewhere."

But tales of their savagery and wiliness don't all come from sensationalist authors looking to make a buck. Tsavo lions are generally larger than lions elsewhere, enabling them to take down the predominant prey animal in Tsavo, the Cape buffalo, one of the strongest, most aggressive animals of Earth. The buffalo don't give up easily: They often kill or severely injure an attacking lion, and a wounded lion might be more likely to turn to cattle and humans for food.

And other prey is less abundant in Tsavo than in other traditional lion haunts. A hungry lion is more likely to attack humans. Safari guides and Kenya Wildlife Service rangers tell of lions attacking Land Rovers, raiding camps, stalking tourists. Tsavo is a tough neighborhood, they say, and it breeds tougher lions.

But are they really tougher? And if so, is there any connection between their manelessness and their ferocity? An intriguing hypothesis was advanced two years ago by Gnoske and Peterhans: Tsavo lions may be similar to the unmaned cave lions of the Pleistocene. The Serengeti variety is among the most evolved of the species—the latest model, so to speak—while certain morphological differences in Tsavo lions (bigger bodies, smaller skulls, and maybe even lack of a mane) suggest that they are closer to the primitive ancestor of all lions. Craig and Peyton had serious doubts about this idea, but admitted that Tsavo lions pose a mystery to science.

115. The book *Man-Eaters of Tsavo* annoys some scientists because

1. it revealed that Tsavo lions are ferocious.
2. Patterson made a helluva lot of money from the book by sensationalism.
3. it perpetuated the bad name Tsavo lions had.
4. it narrated how two male Tsavo lions were killed.

Sol. Ans.(3). The third paragraph of the passage depicts option (3) as the reason for the book *Man-Eaters of Tsavo* annoying some scientists. Options (1), (2) and (4) are irrelevant in the given context. Hence, option (3) is the correct option.

116. According to the passage, which of the following has NOT contributed to the popular image of Tsavo lions as savage creatures?

1. Tsavo lions have been observed to bring down one of the strongest and most aggressive animals—the Cape buffalo.
2. In contrast to the situation in traditional lion haunts, scarcity of non-buffalo prey in the Tsavo makes the Tsavo lions more aggressive.
3. The Tsavo lion is considered to be less evolved than the Serengeti variety.
4. Tsavo lions have been observed to attack vehicles as well as humans.

Sol. Ans.(3). Option (3) does not contribute to the popular image of Tsavo lions as savage creatures. Options (1), (2) and (4) are irrelevant in the given context. Hence, option (3) is the correct option.

117. The sentence which concludes the first paragraph, "Now they knew better", implies that:

1. The two scientists were struck by wonder on seeing maneless lions for the first time.
2. Though Craig was an expert on the Serengeti lion, now he also knew about the Tsavo lions.
3. Earlier, Craig and West thought that amateur observers had been mistaken.
4. Craig was now able to confirm that darkening of the noses as lions aged applied to Tsavo lions as well.

Sol. Ans.(3). The opening paragraph of the passage manifests option (3) as the implication of the sentence which concludes the first paragraph, "Now they knew better". Options (1), (2) and (4) are irrelevant in the given context. Hence, option (3) is the correct option.

118. Which of the following, if true, would weaken the hypothesis advanced by Gnoske and Peterhans most?

1. Craig and Peyton develop even more serious doubts about the idea that Tsavo lions are primitive.
2. The maneless Tsavo East lions are shown to be closer to the cave lions.
3. Pleistocene cave lions are shown to be far less violent than believed.
4. The morphological variations in body and skull size between the cave and Tsavo lions are found to be insignificant.

Sol. Ans.(3). The hypothesis advanced by Gnoske and Peterhans is "Is there any connection between their manelessness and their ferocity?". Now, if option (3) is true, then it would weaken the hypothesis because in this case, Pleistocene cave lions would not have a close resemblance to the Tsavo lions. Options (1), (2) and (4) are irrelevant in the given context. Hence, option (3) is the correct option.

An easy passage – could be cracked.