



Study focused on comparative images from the international online environment regarding the animal vs. human digestive system, completed with elements of digestive physiology

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STUDY OF FOOD HABITS IN RELATION TO ANATOMY AND PHYSIOLOGICAL ASPECTS AMONG ANIMALS AND HUMANS

-BASED ON THE GRAPHIC TABLE IN THE HEADER-

Abstract

The study in question analyzes the correlation of food requirements according to the structure of the digestive tube, analysis given by the presentation of the exemplary image below, which tries to demonstrate the anatomical and physiological similarity between herbivores and human nature, compared to carnivores. The present study tries to introduce more elements of comparison, to increase the degree of certainty in the interpretation, but it is not an exhaustive one. Thus, it is tried through anatomical correlations with herbivores to show if it can be concluded that the human digestive tract, man in general, is determined vegetarian or mixed type.

Introduction

Human nature in general from time immemorial has presented a varied way of eating, starting with the so-called Neanderthal human transformation, up to Homo Sapiens and today, the food has sometimes gone through extreme variations, if in prehistoric people it was predominantly animal, due to the way of simple life and the initial conditions of development, possibly genetically being a minor jump from the so-called transition from arboreal mammal to chimpanzee species to primitive man. Slowly there was a transition to a mixed diet, with the appearance of the first agricultural settlements, and the slowing down of climatic migration, with the last glaciation being many proofs of this.

The production of a leap of consciousness in Homo Sapiens, the causes of which are not precisely known, leads to the refinement of food, being increasingly better prepared by fire, leading to anatomical changes, especially highlighted by the cranial transformation, with the mandibular reduction and increase in volume of the cranial cavity, probably with changes including internal ones such as appendicular reduction or changes in the intestinal flora.

Nowadays, there are many currents that, either for religious reasons or for reasons of their own conception of a correct way of life, support different dietary restrictions, reductions or the prohibition of certain foods, in order to maintain health or to follow a doctrine. In some cases these are therapies but that is another aspect, which we do not discuss here.

The most common reductionist food pattern is vegetarianism, which can be of several types: rawvegan (completely unprocessed), vegan, lacto-ovo-vegetarian (contains dairy products or eggs), or partially through fasting. In all these variants, meat-based foods, less fish, are incriminated, which would be unsuitable for human consumption, producing chronic diseases or destroying the natural environment through the proliferation of consumption.

Since the discussion is very complex and there are many concepts under discussion, we will limit ourselves in this study to the anatomical and physiological analysis of the animal environment compared to the human one, which could clarify through similarities whether humans are genetically predisposed to vegetable consumption or whether they would had mixed consumption tendencies. **The comparison cannot be for evidence, because one cannot compare man with animal structures, but can only show a possible tendency of similarity.**

Thus the conclusions must be taken individually and correlated with other studies.

We relied on example images from the online environment for intuitive presentation and as an obvious starting point.

The primal origin of man

In the theories accepted today, the genetic link between man and two species of chimpanzee, (Pan troglodytes) (left) and Bonobo (Pan paniscus) (right), are known, being the closest in genetic structure to the current man, especially the Bonobo.



However, the transition to Homo Sapiens is not clear, in which several theories are incriminated. In this study, it is not the exact origin that is important, but the similar anatomical structures, in order to be included in the comparative food table. It should be noted that both species are predominantly frugivorous - feeding on fruit, but, interestingly, animal products are not missing from their diet, even other chimpanzees, being omnivores. This shows a complex food availability, which is very important for the food integration of modern man, the body being almost anatomically similar. We will come back later with comparisons.



Bonobo skull - close to human dentition

The main differences between humans and great gorillas - generically including chimpanzees¹ consist in the distribution of phytanic acid which is incriminated in the evolution of the species towards man or chimpanzee even, great primates can easily metabolize phytanic acid as part of lipid metabolism. However, also in this study it is specified that the volume of the large intestine is much larger in chimpanzees compared to humans, in humans compensating for the small intestine, but this fact is attributed to their particular dietary pattern, a fact also attributed to the transition to prepared food thermally, considered "quality".

We quote:

"In ruminants, intestinal fermentation of plant materials releases phytol, a constituent of chlorophyll, which is then converted to phytanic acid and stored as fat. While humans can convert free phytol to phytanic acid, they do not accumulate significant amounts of phytanic acid as a result of consuming plant materials. However, they can get phytanic acid from ruminant fats, fish and dairy products. People with impaired phytanic acid catabolism can over-accumulate phytanic acid, leading to peripheral polyneuropathy, cerebellar ataxia, retinitis pigmentosa, anosmia, and hearing loss. This can also lead to cardiac arrhythmias, shortened metacarpals or metatarsals, and ichthyosis."

Evaluation of phytanic acid in vegans compared to the western diet shows lower levels of phytanic acid in the body in vegans and significantly lower than chimpanzees in the same study. It was also found that although the great primates are adapted through phytanic acid receptors, man has genetically adapted to have a stronger oxidation of it. A reverse natural balancing thus intervenes. A very important finding from the comparison between vegans, western diet

and vegetarian great primates is that diet has little influence on phytanic acid levels, with high vegetable consumption maintaining the same level of phytanic acid, leading to the suggestion that phytanic acid is additionally synthesized by great primates. Of these, those with omnivorous diets are closer to humans in terms of phytanic acid levels. In another study, a 6.7 times greater difference in phytanic acid was found in those with a western diet compared to vegans².

Since phytanic acid seems to be an important marker for establishing the human dietary pattern, we will make a detailed description of it.

Phytanic Acid

Phytanic acids are medium, branched-chain fatty acids that people get from eating various foods because they are not naturally produced by the human body. Fatty acids are the building blocks of fat in the human body and have many important functions such as fat storage. Specific roles of phytanic acid include increasing cell membrane fluidity, modifying various proteins, and expressing several genes³. It is obtained daily from the consumption of various animal fats, including various plants, chlorophylla and **cannot be synthesized in the human body**.

Accumulation of phytanic acid leads to Refsum disease, the role of phytanic acid includes increasing cell membrane fluidity, modifying various proteins and expressing multiple genes. In these studies, the involvement of this acid in the reduction of brown fat is also observed. There are no known negative effects of a diet low in phytanic acid.

It can be concluded due to the wide distribution in the animal world, as well as studies at the human level, of the sources and conversion elements of phytanic acid that it is an essential element of life that cannot be greatly diminished in the human diet.

Comparison of digestive tubes in carnivorous animals, herbivores and man

As we can see in the figure below, various comparisons have been attempted between the digestive tubes and the oral anatomy, the excretory system, in order to highlight the food typology in the animal and human kingdoms, in order to direct human nutrition towards a physiological tendency⁴. The image shows top representatives of the animal world in size, lion, gorilla or bear, llama (probably), chimpanzee and man. The transition was made from the area of pure carnivores to pure herbivores and finally omnivores. It should be noted that the selection was chosen relatively correctly, a large carnivore, a large herbivore and representatives related to the man I spoke of previously. However, smaller or larger carnivores and herbivores are missing that would bring a more complex picture to this subject. We will try to introduce one or two representatives of the carnivore and herbivore types in comparison to emphasize the characteristics stated below.

Characteristics of the digestive and excretory tube in different species⁴

CARNIVORE	OMNIVORE	HERBIVORE	FRUGIVORE	HUMAN
				
Physiological food : meat	PF : meat & vegetables	PF : grass & tree foliage	PF : fruits, vegetables, nuts	PF : fruits, vegetables, nuts
4 paws with claws	4 paws with claws/hooves	4 paws with hooves	Prehensile hands and feet	Prehensile hands
Walks on 4 paws	Walks on 4 paws	Walks on 4 paws	Walks on 4 paws/upright	Walks upright
Mouth opening : large	Mouth opening : large	Mouth opening : small	Mouth opening : small/M	Mouth opening : small
Great sharp fangs	Great sharp fangs	Rudimentary, blunt canines	Canines for defense	Rudimentary, blunt canines
Short and pointed incisors	Short and pointed incisors	Big and flattened incisors	Big and flattened incisors	Big and flattened incisors
Blade shaped molars	Blade shaped/crushing molars	Flattened & strong molars	Flattened molars	Flattened molars
Lower jaw embedded inside of the top; no lateral or forward mobility	Lower jaw embedded inside of the top; no lateral or forward mobility/minimal	Upper jaw sits on the bottom; great lateral and forward mobility	Upper jaw sits on the bottom; great lateral and forward mobility	Upper jaw sits on the bottom; great lateral and forward mobility
Shear; swallow w/o chewing	Shear & swallow/crushing	No shear; chew much	No shear; chew their food	No shear; chew their food
Small salivary glands	Small salivary glands	Big salivary glands	Big salivary glands	Big salivary glands
Acid saliva without ptyalin	Acid saliva without ptyalin	Alkaline saliva with ptyalin	Alkaline saliva with ptyalin	Alkaline saliva with ptyalin
Acid urine	Acid urine	Alkaline urine	Alkaline urine	Alkaline urine
Renal secretion of uricase	Renal secretion of uricase	Does not secrete uricase	Does not secrete uricase	Does not secrete uricase
Strong hydrochloric acid	Strong hydrochloric acid	Weak hydrochloric acid	Weak hydrochloric acid	Weak hydrochloric acid
Does not require fiber to stimulate peristalsis	Does not require fiber to stimulate peristalsis	Requires fiber to stimulate peristalsis	Requires fiber to stimulate peristalsis	Requires fiber to stimulate peristalsis
Metabolize large amount of cholesterol and vitamin A	Metabolize large amount of cholesterol and vitamin A	Metabolize small amount of cholesterol and vitamin A	Metabolize small amount of cholesterol and vitamin A	Metabolize small amount of cholesterol and vitamin A
Sweat glands in the paws; gasp to cool the blood	Sweat glands in the whole body	Sweat glands in the whole body	Sweat glands in the whole body	Sweat glands in the whole body
Intestine from 1.5 to 3 times body length	Intestine 3 times body length	Intestine 20 times body length	Intestine 9 times body length	Intestine 9 times body length
Colon short smooth alkaline	Colon short smooth alkaline	Colon long complex acid	Colon long sacculated acid	Colon long sacculated acid
Not metabolize cellulose	Not metabolize cellulose	Metabolize cellulose	Does not metabolize cellulose	Does not metabolize cellulose
Complete digestion 2-4 hrs	Complete digestion 6-10 hrs	Complete digestion 24-48 hrs	Complete digestion 12-18 hrs	Complete digestion 12-18 hrs

In order to correctly evaluate the intention of this table to orient society towards the vegan style, by comparing it with vegetarian animals, we will analyze each statement point by point, eliminating those that are not related to nutrition, in this case:

- Prehensile
- Walks
- Sweat glands

For all other characteristics we will make a table with the initials A and F, true or false, at the end making a score; we will also introduce a variable of diversion of the subject from the purpose, which takes away from highlighting the conclusions.

1. Natural food: Unlike lions, hyenas and other prey animals, including marine ones, which are genetically made to feed on animal food, either due to the range or millennial adaptability that prevents them from finding other ways of feeding, those presented the representatives in the table are not even close to accurate, gorillas and chimpanzees, regardless of the species, occasionally consume small animals even their own representatives, their food being omnivorous, but depending on the climatic and regional conjuncture, more precisely they are adapted to the environment there and at that time, which makes them very resistant even in harsh conditions. Thus, the result of the table does not correctly present the reality.

Answer: False

2. Mouth opening: In large prey animals the mouth opening is naturally larger relative to body size, but let's not forget that herbivores also have a large mouth opening relative to body size. Likewise, omnivorous animals have a large mouth opening, also relative to their body size. It is interesting to note that some animals considered carnivorous, such as bears, can become omnivorous in certain situations of food crisis, but in reality the diet of bears is mixed. Relative to the size of the human body, the mouth opening does not show a small but a medium opening when the maximum opening is attempted. A small mouth opening is found especially in certain forms of marine life.

Answer: F – False to Interpretable

3. Sharp canines: Long and sharp canines are the prerogative of large predators, with the role of catching and fixing food, so they are an attribute of carnivorous species. Carnivorous subvariants in the animal world are dentites with all teeth sharp and though, or very sharp. In omnivorous species, the canines are flattened, and in herbivores, in many cases, the distal dentition of the canines, with the role of trituration, no longer exists. In the figure above there is an inadvertence about the bonobo chimpanzee having a verified omnivorous diet, which is claimed to be canine for defense but not proven, otherwise there is no such study anywhere, nor could it be claimed clearly due to their mixed food type. So canines are a prerogative of carnivores in terms of size, but they do not even show in the human case that the specific diet should be plant-based, their size being similar to that of close omnivorous⁵ species.

Answer: Interpretable to True

4. Short and sharp incisors vs. wide and straight: Incisors are a normal marker of dental function and represent the purpose of cutting – gnawing – in the carnivorous world. The natural evolution that led to the division of species, carnivores, herbivores, mixed omnivores, etc. he also specialized the dentition for specific functions. To highlight the human and animal dental structure comparatively, we can take the design of the incisors, but it must be integrated together with the molar. For this purpose, we can easily observe that herbivores lack a large part of the lateral teeth and the lateral movements are very extensive, not being able to be performed by humans. Probably the purpose of these movements is to "spin" the oral food bowl to be soaked with salivary enzymes, thus preparing the phase of slow chlorophyll digestion in the intestine. We mention that the digestive tract of ruminants is soaked with enzymes and microbial flora that break down chlorophyll and fibers, which are far more quantitative than human ones. Only saliva in ruminants daily is quantitatively five times higher than plasma⁷.

In this way we can conclude that the differences in functionality and the lack of premolars would show a tendency of mixed functionality, between ruminants and carnivores, the lower incisors being relatively thin and with sharp edges, not being able to be differentiated much from carnivores. Large primates like bonobos are omnivorous and have human-like dentition. One cannot obviously infer a dietary trend from the shape of the dentition.

Answer: False to Interpretable

5. Sharp vs flat molars: Molars vary a lot in the animal world, in humans they are found in an intermediate variant, when they are young their shape is best highlighted, with time the surface flattens due to wear. When young, the molars have a sharp cuspid shape, intermediate between carnivores and herbivores. Thus, a clear conclusion cannot be drawn regarding their role, animal or vegetable food according to form. The answer below is due to the purpose of the presented image, to show that man is genetically predisposed to plant-based food.

Answer: False to Interpretable

6. Mandibular mobility: unlike large carnivores, including aquatic ones, man has mandibular laterality movements, the TMJ joint allowing slight lateralization. However, lateral movements at the table are almost invisible, the predominant movements being vertical, masticatory. In the animal world of herbivores lateral movements are main, probably to soak

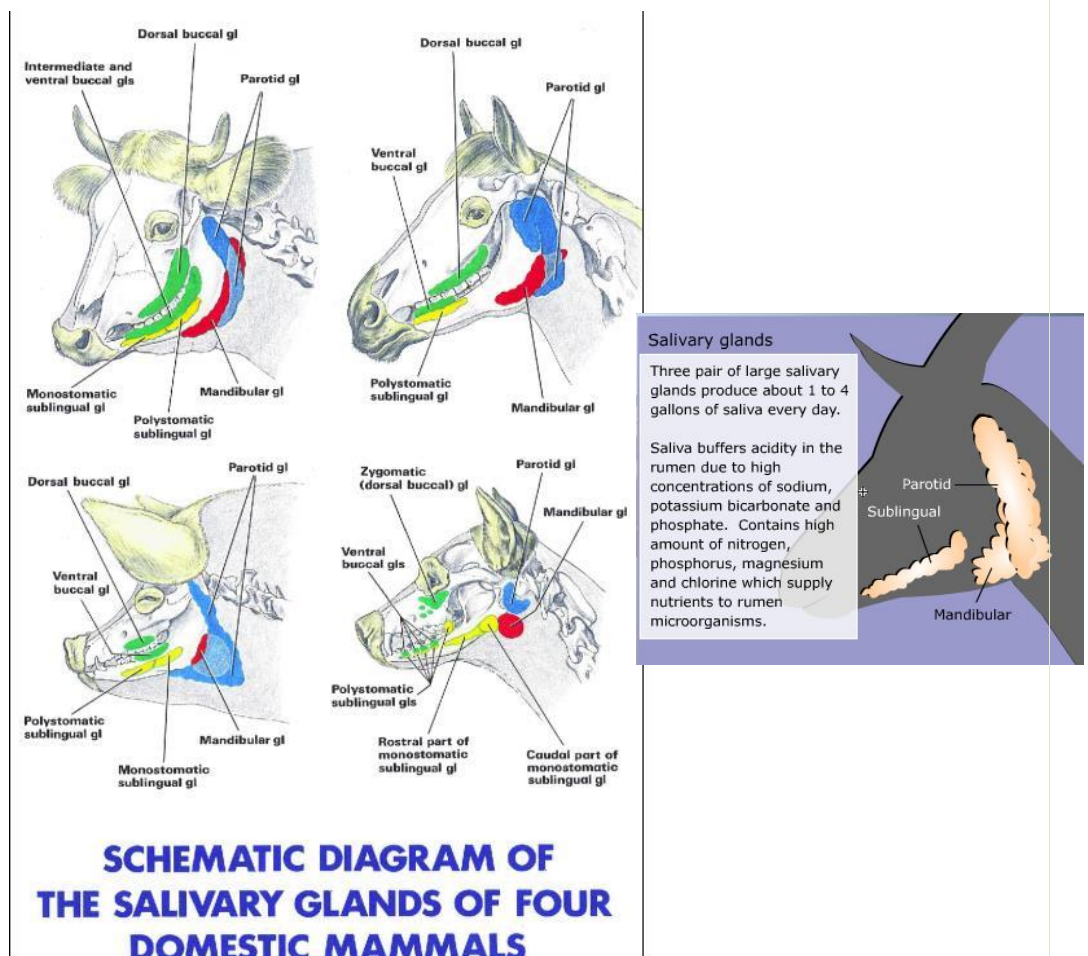
the plant bowl with abundant saliva. In this sense, human mandibular movements are closer to carnivores than to herbivores, but they can fall into the mixed category. The answer below is due to the purpose of the presented image, to show that man is genetically predisposed to a plant-based diet.

Answer: False to Interpretable

7. Shearing and swallowing vs tearing and chewing: in the animal world, the scale often shows the function, the type of mastication and digestion⁸, thus in large carnivores to ensure survival it is necessary to quickly gobble up food, this being very limited in most cases. In large herbivores on the other hand, the food being usually sufficient, or so it was naturally expected, the time of mastication is very long as is digestion. Humans have an intermediate mastication and digestion time, between carnivores and herbivores, between 4 and 8 hours, depending on the type of food. In herbivores it usually exceeds 11 hours. Thus man does not have an obvious digestive pattern regarding food.

Answer: Interpretable to True

8. Salivary gland size:



As can be seen in the figures presented^{9,10}, the size of the salivary glands is clearly different from humans, in ruminants the parotid glands are much larger, some including palatal salivary glands that are not found in humans, herbivores needing a lot of saliva for the preparation of the vegetable bowl. There are few data on carnivores, but we learn from a study on salivary glands in lions¹¹ that they are 6 in number and similar to other carnivores, not being small. We can see in the dog which is essentially a carnivorous animal (omnivorous in the circumstances) that the salivary glands related to the size of the head are not much different in size and location from humans. All these comparisons must be made relative to head size in order to correctly interpret a result.

As a result of these checks, an over-dimensioning of the salivary glands in herbivores compared to humans is found and a closeness to humans in carnivores, sometimes over-dimensioning.

Answer: False

9. Salivary Ptyalin or Alpha Amylase: This enzyme is very interestingly found especially in human saliva and is not found in pure carnivores¹², but not in most herbivores¹³, being partially found in most omnivores (by omnivores we mean animals with a mixed diet, herbivore and carnivorous).

Its exact role and why it is especially found in humans is not known, but in verified studies slightly more quantitative amylase was found in the saliva of animals that feed on fruits, roots, seeds, etc. but the lower percentage of

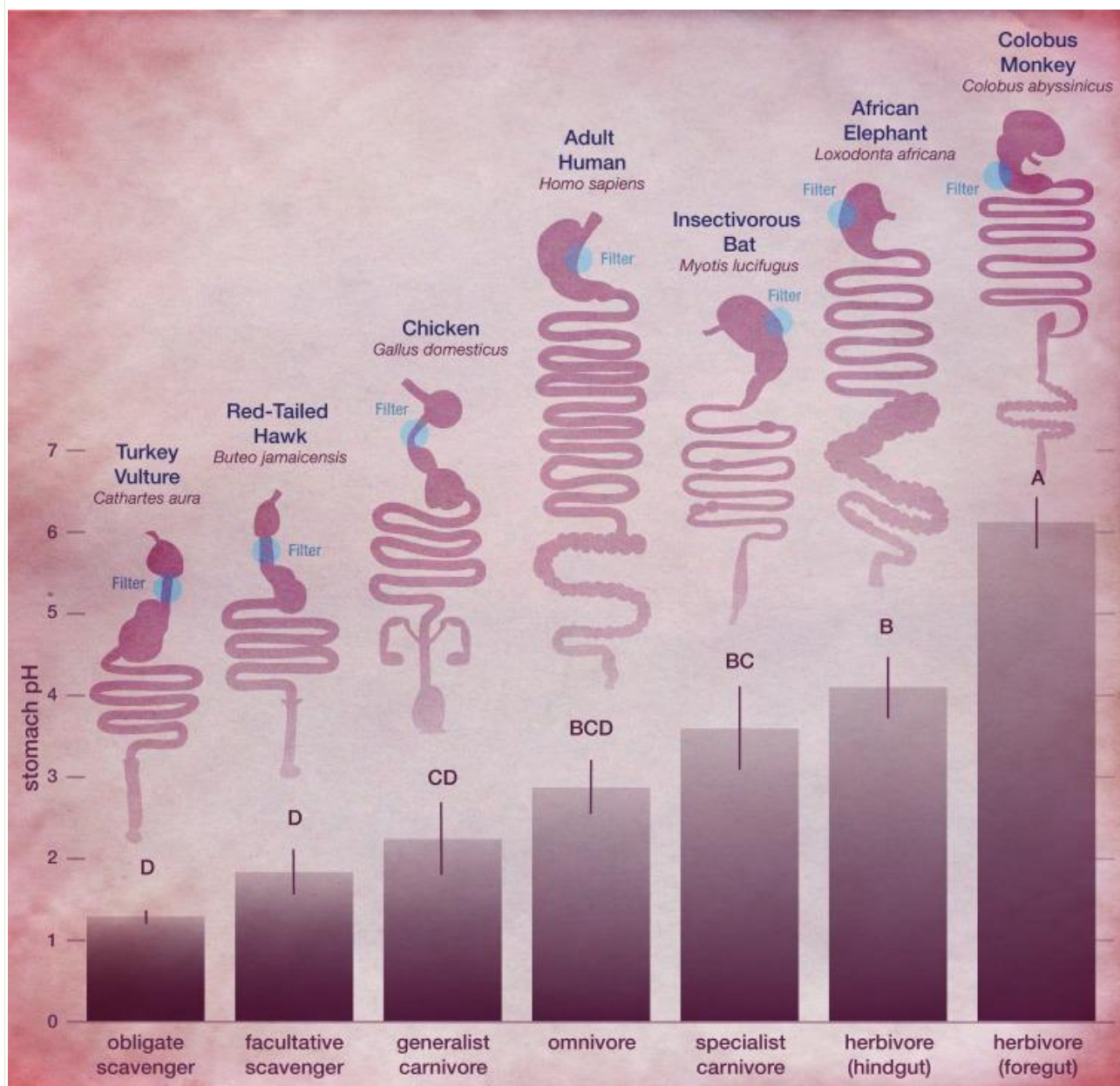
man. As a result of these findings, man cannot be compared to any species or category of animal from this point of view, some statements in the reference image being false, but the similarities with some frugivores must still be studied.

Answer: False to Interpretable

10. Urinary secretion of uricase: The enzyme that transforms uric acid into allantoin, uricase, has been lost in humans during evolution¹⁴, including monkeys¹⁵, and the elimination of uric acid is also missing in humans who rely mainly on the kidneys. As a result, the comparison with animals cannot be made because it does not exist in humans, but it shows the possible genetic evolution from chimpanzees, as we showed previously. But unlike monkeys, uricase is extracted from the liver of goats and other vertebrates¹⁶, contrary to what the image states; also as an incorrect statement, the kidneys do not eliminate uricase, this having a metabolic role, of converting uric acid. Bearing in mind that in the animal world man and genetically related monkeys do not possess uricase and it is not excreted renally, the statement in the picture is false.

Answer: False

11. Quantitative Hydrochloric Acid:



Comparison of the digestive tract in herbivores and carnivores

In this article¹⁹, the acidity of the stomach in multiple species is highlighted, the conclusion being that there are many carnivores that have a more alkaline stomach pH than the human one, the highest pH as acidity being in hyenas, which have this need due to their eating habits of consuming decomposed animals, for antibacterial prevention. Humans

have an intermediate pH towards carnivores, with a big difference compared to herbivores, the large amount of hydrochloric acid not being eloquent, being in relation to body size. We will give an appropriate answer, taking into account the type of digestive tract in different animal species.

Answer: False

11. Does not require fiber to stimulate peristalsis: In non-medical terms peristalsis means the propulsive movements of the intestines when there is food. It is obvious how this statement is false, peristalsis is present under all possible circumstances, so we will not elaborate on this statement.

Answer: False

12. It metabolizes different amounts of cholesterol and vitamin A: it is stated in the table that carnivores have large amounts, humans and herbivores have small amounts. Regarding the metabolic requirement of vitamin A, the study presented²⁰ is eloquent, showing an average requirement between herbivores and carnivores, for example the minimum required for humans is 1200 ui²¹ and for large herbivores beef and horse being required less than half as for humans. Omnivores have needs similar to humans²², depending on their body size and natural function. Cholesterol absorption and metabolism are studied less and in different contexts, but it is certified that the storage and transformation of cholesterol in humans²³ is related to adipose tissue, similar to omnivores and not necessarily to herbivores. The table statement is strict and non-conforming.

Answer: False to Interpretable

13. Salivary glands located in soles vs. body and body cooling: These are statements unrelated to carnivorous vs. plant metabolism, certain animals have adaptations to hunt at night and conserve energy through reduced sweating²⁴, so the answer is not relevant.

Answer: not in accordance with the purpose of the article

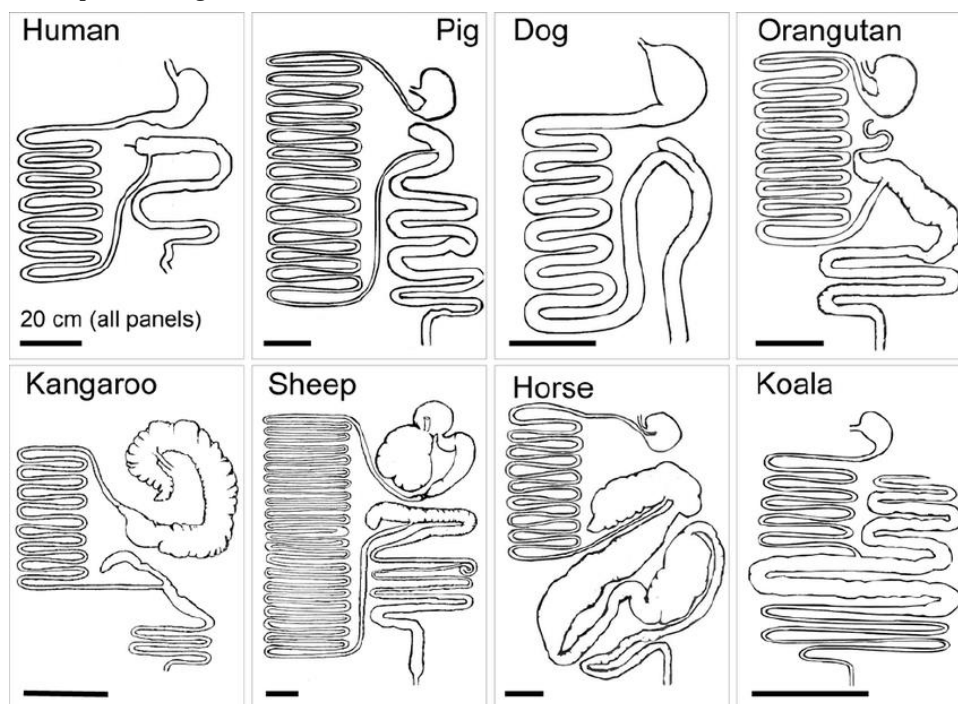
14. Intestinal Length: This section is representative of this article, being widely debated for and against metabolic pattern. As can be seen in the figure above, which is a little non-specific as it is related to completely different body sizes compared to humans, but also in the one below²⁶, which is closer, the size of the small intestine and the colon differ a lot compared to humans, from for example, in herbivores the colon is much longer and voluminous³⁰ and in carnivores it is short and flattened.

Comparative digestive system

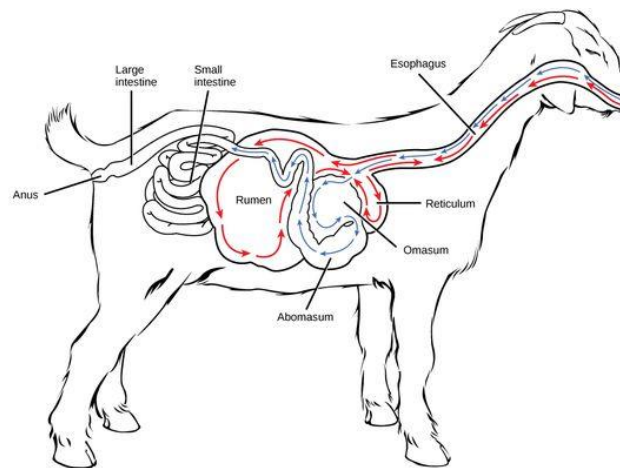
I will present some representative images for the above table we refer to:

1. Lion²⁷

2. Orangutan - in the previous figure, similar to the human⁴



3. Goats²⁸:



Digestive system in goats

The digestive system in goats is completely different from the human one, having a compartmentalized stomach and a short colon.

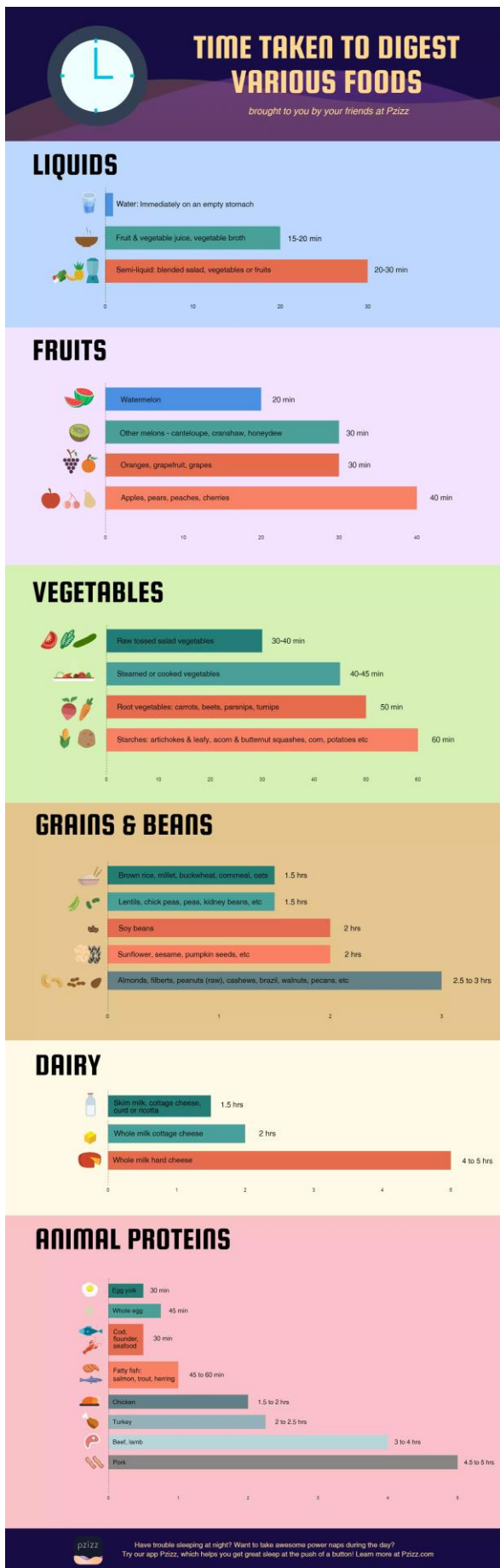
There are countless details and studies, but the images presented unequivocally show significant differences from human ones, less so in animals with a mixed, omnivorous diet, such as chimpanzees and pigs, where there are similarities but no identities. All of this shows how the alimentary canal has evolved to support its specific alimentary function. No similarity can be made between man and any animal, being only non-specific similarities, but the images show an omnivorous nature (like the name) of human nutrition, no specific correspondences being found with either herbivores or carnivores. As the table also states, the length of the digestive tube differs greatly, being short in carnivores and very long in herbivores. The frugivorous insertion is relative, because there are few pure frugivorous species, the Koala, as it appears in the table, does not conform to this length, being much longer relative to body size than the table states. In the table frugivores refer to a species of chimpanzee, probably Bonobo, genetically related to humans, but it is demonstrated that the diet of different species of chimpanzees is seasonal, they also consume animal proteins from small animals in many situations. The consumption of fruit - frugivore - human is completely not recommended in a continuous character, most of the fruits for human use have an acidifying character, but also lacking in complex nutrients, not in accordance with exclusive human consumption.

Answer: False to Interpretable

15. Colon long and baggy vs short and straight:

One of the statements draws attention, and checking how long the colon is, we notice that in the table for herbivores, the colon is very long, not as long as it is stated that it would be in the same plane as the human one. On the other hand, in goats, the compartmentalization of the stomach is particularly short, allowing for complex preliminary digestion. The length of the colon is rather given by the type of digestion and the duration of the transit, the pH of the stomach¹⁹ which shows a greater similarity with carnivores than with herbivores which have a gastric pH of 5-6 compared to 1.5 in humans. Certified data on colon acidity does not exist, it is debatable how the statement in the table was made, but there is, as I specified, verified data on stomach acidity, which indirectly shows the adapted function of each species to its own food pattern. Therefore, it is not possible to compare the acidity of a lion's colon with that of a human, being a different tract proportionally but also in function, these functions being taken over by other digestive areas. Biodiversity does not require comparisons or standardization, although the predisposition towards a diversified human diet is obvious.

Answer: False to Interpretable



Most macroorganisms cannot digest cellulose without the help of bacterial microorganisms, including herbivores such as the Giant Panda that have human-like digestive tracts and cannot digest water-insoluble fibers.

Studies have shown that although humans are thought to be unable to digest these fibers, there are bacteria in the colon similar to those found in herbivores that can digest these fibers. So studies continue, general information being relative. But that's why the functions of the colon exist to probably separate excess fiber that can't be absorbed.

Answer: True to Interpretable

17. Complete digestion time

According to the image presented below³¹ the statement that human digestion takes 12-18 hours is untrue, or partially true when referring to certain fibrous foods³², citrus fruits, etc. but if we refer to the complete digestion time, it is close³³ to that mentioned for these difficult foods. There are no reliable references regarding the complete digestion time in different animals, so the information in the table cannot be verified. On the other hand, the comparison with the chimpanzee is appropriate taking into account the major genetic similarities, already mentioned, but also the possible evolution of man from these primates. Digestion times in the animal world are given by the dominant type of diet, required by specific evolution, but also by the basic components of food, such as hard vegetable fibers, which need a very long time, specifically in ruminants, or a little time in certain protein foods.

As with humans, carnivores digest food very quickly, the specificity being thus universal, so it cannot be introduced compared to humans to determine a food-favoring genetic pattern. Moreover, frugivores are not really frugivores, as I mentioned in the first pages, they are opportunistic, catching small animals or even intra-species when possible, the conclusion would be that chimpanzees have a more omnivorous than frugivorous diet. Frugivorous animals³⁴ are predominantly birds, and only a small number of climbing species are truly frugivorous. The answer is interpretable because it refers to frugivores as having the same digestion time but the number is small and not properly studied in true frugivores.

Answer: True to Interpretable

Interpretation of results

The centralization of the results is done only for the relevant answers, those that are not the subject of the study were not taken into account being considered as irrelevant. In order to be able to be interpreted, the total amount was considered as a number and the final result as a percentage, the false results being on the scale as the total amount, the interpretable ones as the middle total amount and the true ones as the true total amount, thus it is easy to perform a percentage evaluation on a scale from 1 to 10, 1 being false and 10 being true. The purpose of this scale is to show whether the result is at least interpretable if not credible, or the opposite variant tending towards falsehood. Thus, there were 4 true results, 12 interpretable results, 13 false results. The total amount is 17 paragraphs, the interpretable ones being included in true or false.

The result is more than conclusive, the false results being 3 times more than the true ones. However, the 12 interpretable results make the real displacement of the result to be false but interpretable, essentially the results are interpretable, the conclusion being in the area of relativity of general statements. The presence of many untruths in the interpretable area does not bring clarification on the multiple information, but moves the final result into the negative, untruthful area.

General considerations on the results

The overall idea that emerges from the presentation of such a table shows a membership of the area of interest or vegan beliefs, perhaps a little further towards rawvegan directions. Why would there be such a trend, because man is presented as belonging to frugivores, according to the position in the study and the similarities chosen, creating the idea of genetic determinism towards frugivores, and the need to return to true nature. However, the detailed checks presented above show that this orientation cannot even be compared, as there are too many structural differences. However, the study insists on this form, which is probably part of the international Rawvegan propaganda area, being the profile associations that spread multiple materials beautifully arranged graphically. Let's give a hilarious example, if instead of the smiling young lady there was a bearded man with an open mouth, what would the picture of the table be? So graphic presentation can do a lot for uninitiated or very young people. Also, the study may involve certain branches of yoga that find motivation in promoting a vegan lifestyle but that do everything to promote this own truth, without taking into account any scientific argumentation. There are also religious "back to nature" associations that would make idyllic or even Darwinian promotions, not promoting the idea of common origin with chimpanzees, but supporting their diet.

The current evidence found in most relevant studies, as well as the graphic images presented in this article, showing the structure and human digestive tract, show a mixed diet, or at least the human bioavailability to process almost any type of food, fitting correctly into the typology omnivorous.

Conclusions

The results interpreted in this article show unequivocally that the human digestive structure is neither similar to carnivores nor to herbivores, showing a mixed structure. Also, the similarity with frugivores, although they exist ancestrally, being genetically related, cannot be done, because naturalists have shown that chimpanzees related to humans are not strictly frugivores, but rather conjunctural, even omnivores, the true frugivores belonging to other classes of the animal kingdom. The negative values of the statements presented can be interpreted as inductive and biased, propagandistic rather than true.

However, we cannot ignore the fact that the true human alimentary tendencies, or the final structure of the digestive tract, genetically and evolutionarily oriented, are not known. Man is very adaptable and tolerates many food patterns, with the mention that these are usually oriented according to the geographical area and environmental characteristics, some being predominantly carnivorous, others vegetarian. There are studies that show that people have two types of metabolism, a slow one that is prone to vegetarianism and a fast one, oriented to fast-burning animal products. Therefore, further studies are required to determine the human genetic predisposition to a common food type or not.

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