

Health Benefits of Physical Activity

BACKGROUND

You are going to watch an interview between Steven Bartlett – a podcaster and his guest – David Raichlen. In this interview the speakers discuss health benefits of physical activity.

David Raichlen is a professor of Human Evolutionary Biology, Exercise Physiology and Neuroscience at the University of Southern California. His idea worth spreading is that if we want to manage population health, we must reduce the number of hours we spend sitting each day.

BEFORE YOU WATCH

WORK IN PAIRS. Consider the following questions:

- How many hours do you spend sitting each day? Is it okay for you to sit this amount of time?
- How many hours do you sleep each day? Is it enough?
- Can you think of any sitting risks? How harmful is too much sitting?

Complete the notes:

1. Hours per day people nowadays spend sitting down:
2. Hours per day people nowadays spend sleeping:
3. Diseases linked to inactivity:

WHILE YOU WATCH

Watch the podcast at "[The Brain Doctor: 5 Popular Habits That Will Kill Your Brain Health!](#)" - [David Raichlen – YouTube](#) and answer questions under sections 1-31 below (task types: open questions, gap fill, sentence completion, multiple choice):

*

It is important for you to study the items of vocabulary listed under each section before you watch; while watching make notes on Professor Raichlen's answers to be able to join in a discussion with your classmates afterwards.

1. Intro

- Is there a link between a sedentary lifestyle and dementia?
- Can healthy ageing depend on social interaction?
- Does excessive alcohol use shrink the brain?
- Can sleep amount be a factor in cognitive decline? Which is worse – less or lots of sleep?
- What is the recommended amount of time to exercise per week?
- How many people (%) meet these guidelines?

*

outcome – wynik, rezultat
guidelines – wytyczne
literally – dosłownie

2. My Work: How Lifestyle & Exercise Affects the Brain

- What has Prof. Raichlen's work been focused on?
- What does he mean by saying: *'We're dealing with brain health problems that are only going to increase as our population ages.'*?
- Complete the numbers:

'There are million people in the US today that are diagnosed with Alzheimer's disease or other related dementias. That's projected to grow to around million people over the next 25 years or so and million people diagnosed with dementia worldwide over the next 30 years or so.'

- Are you surprised by these figures? Do you know anyone who was/has been diagnosed with dementia? How does dementia manifest itself, what are its signs and symptoms? Is dementia dangerous?

3. You Can Change an Ageing Brain

- Can we grow our brain? Can we work on our brains just as we can work on our muscles? Is there any scientific proof that brains produce new neurons? If yes, how? What is the evidence from animal models?

*

cognitive – poznawczy
decline – spadek, zanik
to generate – wytwarzać, tworzyć
to stave off – oddalać, chwilowo powstrzymać

4. What is a Neuron

- How is a neuron defined?
- What is it responsible for?

5. What is the Hippocampus

- Where is hippocampus located in the brain and what animal does it resemble?
- Why is hippocampus considered the key area of the brain?

- Is there a link between the hippocampus, neurodegenerative diseases, and exercise?

*

temporal lobe – płat skroniowy

seahorse – konik morski

rodent – gryzoń

working memory – pamięć robocza

to recall – przypomnieć sobie

spatial navigation – poruszanie się, orientacja, nawigacja przestrzenna

volumetric – objętościowy

frontal lobe – płat czołowy

6. The Link between Exercise and Brain

- Thinking about human evolution, was there a time when physical activity became imperative to do in order to survive?
- Is there evidence for any positive outcome of exercise and brain function (studies in rodents)
- How does exercising affect the brain?

*

imperative – pilny, palący, konieczny, istotny, niezbędny

human species – gatunek ludzki

cognitive capacity – możliwości poznawcze

ape-like – małpi, małpowaty

hunting-gathering – zbieracko-łowiecki

consistent – stały, konsekwentny

7. What Happens to Our Brain When We Don't Exercise

- What are the possible outcomes of low level physical activity on a broad public health scale?
- What happens in the brain when we do not exercise?
- What happens in the brain when we exercise?

*

to shrink – kurczyć się

hippocampal – dotyczący hipokampu

cognition – funkcje poznawcze, rozumowanie

leisure time – czas wolny, rekreacja, wypoczynek

8. People Aren't Meeting the Guidelines for Good Health

- What is the average time per day that people today spend sitting?

- According to Professor Raichlen, the natural condition of man used to be physically active – over the course of 2 million years we never had to adapt to low levels of physical activity. So what are the facts and figures regarding the increase in sedentary behaviours – when did it all start?
- What does Prof. Raichlen mean by saying: *'I like to think of our bodies as great energy minimizers.'*

*

stats = statistics – statystyka

still – nieruchomy

stimulus – bodziec (pl. stimuli)

blood vessels – naczynia krwionośne

tissue – tkanka

maintenance – utrzymanie, wyżywienie

to implement – wprowadzić w życie, wdrożyć

9. What Activities Are Good for Our Brain?

- Can you name any types of activities that are beneficial for the brain?

*

strength training – trening siłowy

ton – tona

resistance training – ćwiczenia z oporem

endurance exercise – ćwiczenia wytrzymałościowe

rodent – gryzoń

underlie – leżeć u podstaw (czegoś)

orienteeering – biegi na orientację

trail – trasa, szlak (np. w lesie, turystyczny)

randomized controlled trial (RCT) – badania kliniczne z randomizacją, tj. losowym doбором pacjentów do grupy kontrolnej i eksperymentalnej

hiking – chodzenie po górach, piesza wycieczka

habitat – środowisko życia, siedlisko

to enhance – wzmacniać, zwiększać

10. Orienteering Can Train the Brain

- What is orienteeering?
- What research has been done in this respect – can you describe the study they discuss?

11. How the Different Types of Exercise Increase Neuroplasticity

- What mouse models are described in this respect? What are the findings?

12. Impact of Exercising in Greener Spaces than Urban

- What is the philosophy behind the green exercise movement?

13. Better Cognition Exercising before a Task

- What examples do both speakers give for the above? Can exercise improve your cognitive function and keep your brain sharp?

Podcaster:

Professor:

14. The Optimal Time of the Day to Exercise

- Why does Professor Raichlen prefer exercising in the morning? What motivates him?
- What's Professor's advice for people who are not exercisers as yet?

15. The Hadza: Researching Hunter-Gatherer Tribes & the Findings

- Who are the Hadza and where do they live? Why did Professor Raichlen research the Hadza? What findings did he make? Listen and fill in the gaps below:

Professor Raichlen has been studying the Hadza Tribe in Northern T _ _ _ _ _ since 200_. According to him, the Hadza provide a w _ _ _ _ _ into what a hunting-gathering lifestyle looks like. He became interested in the kinds of health i _ _ _ _ _ that can be seen in the context of a hunting-gathering lifestyle and how much physical activity it takes to be a hunter-gatherer, and how it relates to b _ _ _ _ _ of cardiovascular health and to their c _ _ _ _ _ , as well as how this lifestyle impacts the way they a _ _ .

16. What is the Optimal Exercising Time?

- Does an optimal exercising time exist at all?

Answering the question whether there is an optimal amount of exercise that's in line with evolutionary past, Professor Raichlen mentioned stepcounts. How many steps per day do the Hadza get on average? Is it a), b), c) or d)?

a) 5000-10,000 b) 10,000-15,000 c) 15,000-20,000 d) 20,000-25,000

- *'The benefits that people get from a public health standpoint start to occur at much smaller levels'* – what levels are mentioned – how many steps per day?
- *'You start to maybe see diminishing returns as you get higher and higher levels'* – can you elaborate on this statement?
- Even older adults in Hadza tribe do far more in terms of physical activity than their peers in the US nowadays. How many minutes per day do these two groups engage in active physical activity on average?

17. Cardiovascular Illnesses in Hadza Tribe

- Cardiovascular diseases are considered the top cause of death in the US/UK nowadays. Can this be observed in the Hadza?
- What markers have been measured in the Hadza?

*

diabetes – cukrzyca

hypertension – nadciśnienie

inevitable – nieuchronny

preventable – możliwy do uniknięcia

to alter – zmienić

cornerstone – kamień węgielny, podstawa czegoś

to engage in sth – angażować się w coś

to tweak sth – podrasować coś, ulepszyć, dopracować

18. What's the Issue with Sitting?

- Professor Raichlen said: "*sitting is a beautiful thing*", so why is it actually comfortable for the body to sit?
- What is happening in the body when we are inactive, e.g. sitting for long periods of time?
- How about sitting in the Hadza? Do they sit at all?
- How old is a chair, when was it actually invented?
- Can you explain what '*this crazy game of musical chairs*' refers to?
- What tip does Professor Raichlen give to break up prolonged sitting?

*

load – ciężar

to fidget – wiercić się

to fuel – podsycać

fatty acids – kwasy tłuszczowe

to squat – kucać

to shift – zmieniać

to build up – magazynować, gromadzić się

ubiquitous – wszechobecny, powszechny

weird – dziwny

illuminating – pouczający, kształcący

middle ground – złoty środek, stanowisko kompromisowe

to pee – siusiać, sikać

reminder – przypominajka, przypomnienie

squats – kucki, przysiady

19. The Power of Daily Small Amounts of Exercise

- From an epidemiological standpoint, how vigorous, intermittent physical activity is

explained and what is its benefit?

- Why short bursts of vigorous exercise or brisk walking are advocated?
- How is "vigorous" defined?

*

intermittent – przerywany
brisk – żwawy
pace – tempo
treadmill – bieżnia
profound – przemożny

20. How to Improve Memory

- Professor Raichlen claims that learning, education, keeping yourself cognitively challenged throughout your lifespan is a way to stave off cognitive decline; he goes on to say that lifelong learning is associated with better reserve. What reserve does he mean?

*

to boost – pobudzać, zwiększać
merit – wartość, zaleta
lifespan – czas trwania życia
variable – zmienna
to confound – udowadniać nieprawidłowość
atrophy – zanik, atrofia
decline – ubytek, spadek
(neural) pathway – połączenie nerwowe, sieć nerwów

21. Top Factors that Fuel Cognitive Problems

- What is meant by "excessive" alcohol consumption that is associated with cognitive decline, in terms of drinks per day?
- What about sleeping? (sleep amount – oversleeping or sleep deprivation, sleep quality)

*

plaque – płytka miażdżycowa
clearance – oczyszczanie
sweet spot – optymalny punkt (np. coś, co przynosi najlepsze efekty)
caveat – zastrzeżenie
to suss sth out – rozpracować coś, wy badać coś, rozgryźć
to displace – wypierać
at the expense of – kosztem czegoś
infinite – nieskończony

22. Link between Human Connection & Brain Impact

- Why social connections are a key aspect of maintaining a healthy brain?

- What does Professor Raichlen mean by saying that in the past social connections were imperative to survival?

*

outcomes – rezultaty

buzzword = buzz term – modne powiedzonko, popularny zwrot

to confide in somebody – zwierzać się komuś

imperative to survival – niezbędne do przeżycia

inextricably – nierozdzielnie

23. Pollution Impact on the Brain

- Does air pollution have any impact on the brain?

*

pollution – zanieczyszczenie, skażenie

peripheral blood – krew obwodowa

respiration – oddychanie

particle – cząstka, cząsteczka

moderate – umiarkowany

to diminish – zmniejszać

bummer – pech; zawód, rozczarowanie

24. Raquet Sports for Brain Health

- Why raquet sports are good for the brain? Provide at least 4 benefits.

*

prescription – zalecenie

hyperbaric chamber – komora hiperbaryczna

affluent – zamożny

contender – zawodnik

25. How Much Activity Do I Have to Do?

- Why does the question: 'How much do I have to do' sort of bums Prof. Raichlen out?

*

to bum out – denerwować

to frame – formułować

by all means – oczywiście, jak najbardziej

26. Endocannabinoid Receptors and Exercise Rewards

- The endocannabinoid system is the body's natural form of marihuana, the reward system. What is the link with exercise and mental health?

*

endocannabinoid system – układ endokannabinoidowy

ingredient – składnik
rewarding – dający satysfakcję

27. Mental Health Issues Linked to Lack of Exercise

- What tip does Professor Raichlen give to those who do not see any rewards from physical activity?
- Which area of research is Professor Raichlen particularly interested in?
- What is the percentage of people who do not engage in any physical activity?
- What is the relationship of dementia and sedentary lifestyle?

*

to kick in – zacząć działać (np. narkotyk)
to overshoot – przeholować, zagalopować się
to reap (the benefits/rewards) – zebrać, czerpać (korzyści, owoce pracy, plony)
(to be) in infancy – w początkowym stadium
to move the needle (in sth) – zrobić (w czymś) widoczną różnicę
to pay off – opłacić się
non-linear relationship – zależność/ powiązanie nieliniowe (gdy stała zmian zmiennej niezależnej nie powoduje stałej zmiany zmiennej zależnej)
exponential – gwałtownie rosnący/ przyrastający

28. Brain Foods

- What are brain foods and what is the best evidence right now on brain foods?

*

legumes – rośliny strączkowe

29. Reaching Optimal Living

- Complete the sentence: '*The fundamental human misunderstanding about the nature of our bodies and how we are supposed to be living to be optimal is*'
.....'
- In what way can simple actions like walking to lunch instead of ordering in be life-changing?

*

misunderstanding – nieporozumienie
to rebut – obalać (teorię), udowodnić fałszywość (np. twierdzenia)

30. What Causes Alzheimer's?

- Does Alzheimer's exist on a spectrum per se and is there one end of that spectrum – just general cognitive decline and memory reduction?

*

per se – jako taki, sam przez się
to wane (away) – słabnąć, zanikać, zmniejszać się
one's memory recall – pamięć, przypomnienie sobie
to slip-away – wyślizgnąć się

31. Last Guest Question

- On this podcast there is a closing tradition where the last guest leaves a question for the next guest, unaware of who they'll be leaving it for. What is this last guest's question and Professor Raichlen's answer?
- Can you comment on Professor's statements below?

"... we just haven't seen big improvements in adherence ..." /

"... worldwide more countries are becoming more like the US and UK instead of less ..." /

"... it needs to be our focus ..."

*

adherence = compliance – przestrzeganie, stosowanie się do, np. zasad, reguł, zaleceń (przez pacjentów)

Źródła:

The Brain Professor: "Popular Treat Now Considered Deadlier Than Smoking!", The Diary of a CEO, YouTube 08.02.2024, online: 24.09.2024, "[The Brain Doctor: 5 Popular Habits That Will Kill Your Brain Health!](#)" - David Raichlen – YouTube, dostęp: 24.09.2024.

Ćwiczenia na licencji Creative Commons

Mgr Joanna Mazur

