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INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

SMART výuka cizích jazyků na Přírodovědecké fakultě
CZ.1.07/2.2.00/15.0264

Name: **Email:** **Date:** ***/ out of 27***

READING (One point for each correct answer.)

Part 1

Read the article *The pros and cons of the workouts* and answer the question below with one (or more) activities. Write *R* for Running, *A* for Aerobics, *Y* for Yoga and *P* for Pilates.

With which sport(s) ...

1 is there more than one different variety ? _____ _____ _____
2 can you easily get addicted? _____
3 can you easily get bored if you don't change the routine? _____ _____
4 do some specific muscles become stronger? _____ _____
5 do you work on the lower body more than the upper body? _____
6 does it take the longest time to show any benefits? _____
7 does having the right teacher strongly influence your motivation? _____
8 is it difficult to actually get better at the sport? _____
9 can you aggravate an existing injury if you don't do it properly? _____
10 may you not actually improve your fitness? _____
11 will you learn to stand better? _____
12 will you lose weight the most quickly? _____

Part 2

Read the article *Synaesthesia: mixing the senses* and mark the sentences T (True) if they agree with the information given in the reading passage or F (False) if they do not.

1 The study is beginning to show how the brain works. _____
2 A lot of synaesthetes do not know that they understand things differently. _____
3 People with this condition are forgetful. _____
4 They use calendars to remember things like names or digits. _____
5 The sensations stay the same over long periods of time. _____
6 Most of the research on synaesthesia is based on facts that can be proved. _____
7 Non-synaesthetes process perceptual information the same way as synaesthetes. _____

Read the article again and find single words in the text with the following meaning:

8 to show something that was previously not known (paragraph A) _____
9 roughly calculates or judges (paragraph A) _____
10 something that causes a reaction (paragraph B) _____
11 connected with the sense of smell (paragraph B) _____
12 not changing during a long time (paragraph C) _____
13 particular forms of a colour, that is how dark or light it is (paragraph C) _____
14 carried out (paragraph D) _____
15 in the end; finally (paragraph D) _____

The pros and cons of the workouts

Running or aerobics? Yoga or Pilates? Making the decision to get fit is the easy part – choosing how to go about it is the difficult bit. Peta Bee offers some advice.

RUNNING

How quickly will it make difference? After two weeks if running three or more times a week.
How many calories does it burn? Around 612 per hour if you run ten kilometres per hour. You will burn more calories running off-road as you legs have to work harder on soft ground.
Will it keep me motivated? Threadmill running, hamster fashion, can be tedious: run outside, changing your route and terrain whenever you can. As you get fitter, challenge yourself more by entering fun runs.
What are the specific benefits? The basic running action strengthens the hamstring, quadriceps, ilipsoas muscles at the front of the hips, calf and the gluteus muscles each time you take a stride forward. The pumping action of your arms will strengthen the upper body to some extent. And it's among the best forms of aerobic exercise.
What are the risk factors? Your feet absorb three to four times your body weight every time they strike the ground and a shock reverberates up through your legs and into your spine. Good shoes help to cushion the blow and reduce the risk of injury to the knees and other joints.

AEROBICS

How quickly will it make a difference? After four to five weeks of twice-weekly classes.
How many calories does it burn? 374 per hour.
Will it keep me motivated? It depends on your instructor. Classes that stick to exactly the same format every week can become too predictable for both muscles and mind. As with all class-based workouts, there is little scope for progress, so there will come a time when you will want to try something different.
What are the specific benefits? Aerobics classes incorporate an element of dance that will improve coordination and spatial awareness.
What are the risk factors? Low-impact aerobics - at least one foot remains in contact with the floor at all times - are preferable to high-impact classes for anyone prone to back and joint problems.

YOGA

How quickly will it make a difference? After eight weeks of thrice-weekly sessions.
How many calories does it burn? 102 per hour for a general, stretch-based class. Power yoga burns 245 per hour.
Will it keep me motivated? Yoga is all about attaining a sense of unity between body and mind rather than setting and achieving personal targets. However, you will feel accomplishment as you master the postures and there are many different types to try.
What are the specific benefits? In a study for the American Council on Exercise (Ace), Professor John Porcari found that women who did three yoga classes a week for eight weeks experienced a 13% improvement in flexibility, with significant gains in shoulder and trunk flexibility. They were able to perform six more press-ups and 14 more sit-ups at the end of the study compared to the beginning.
What are the risk factors? Don't fall for the line that celebrities get fit on yoga alone. According to Ace, even power yoga constitutes only a "light aerobic workout".

PILATES

How quickly will it make a difference? After five to six weeks of thrice-weekly sessions.
How many calories does it burn? 170-237 per hour.
Will it keep me motivated? Once you start noticing positive changes in the way you move and hold your body, Pilates is hard to give up.
What are the specific benefits? Widely used by dancers and top athletes, it improves postural awareness and strength. Studies at Queensland University in Australia have shown that Pilates exercises can develop the deeply embedded traversus abdominal muscles which support the trunk.
What are the risk factors? Another study by Ace last year found the cardiovascular benefits of Pilates to be limited. Even an advanced 55-minute session raised participants' heart rates to a maximum of only 62% (below the recommended 64-94% said to constitute an aerobic workout) and was deemed the energy equivalent of walking 3.5 miles an hour. If you have back pain, make sure you see a teacher who is also a physiotherapist, as poor technique can make matters worse.

Adapted from *The Guardian*

Synaesthesia: mixing the senses

A Synaesthesia is a condition that raises more questions than answers. For people with this condition, the word *Tuesday* may be yellow, the middle *C* note on a piano could smell of earth and the word *grass* might be the colour purple. Scientists from the University of Melbourne are researching synaesthesia by analysing brain images of people with this condition. It is one of the first objective analyses of synaesthesia and their results have begun to reveal the secrets of how the brain functions. The university has 200 synaesthetes on its database – the largest in the world – and it estimates there could be as many as 1 in 2,000 people with this condition.

B 'Many synaesthetes don't realise they have this condition. They are unaware that the way they perceive the world is different,' says Anina Rich, the scientist who is conducting the research. In most people, a physical stimulus presents a single sensation: light gives us a visual sensation, sound an auditory sensation, smell an olfactory sensation. Synasthetes, however, get an extra one or more sensations. For example, a particular sound, might cause them to experience a colour, taste or smell. This extra layer of information may be behind synaesthetes' excellent memory. 'They have colour as an extra bit of information to help them remember things like names and strings of numbers', says Rich. The literature is also full of assertions that synaesthetes tend to be creative, artistic and highly emotional individuals.

C The scientists are focusing on the most common form of synaesthesis where digits, letters or words elicit specific colours when they are seen or heard. Rich describes one woman who told her: 'If I think about the word *grass* I know the object we call grass is green, but to me the word grass is purple because it starts with G, and the letter G is a purple letter for me.' Rich believes the experiences occur without the conscious effort and start happening from early childhood and they are highly consistent over time. Rich says that one lady saw most of her letters as different, but specific shades of burgundy. These shades stayed the same over the years. Another person, who saw the letter A as red, could not answer red quickly when shown a green letter A. Her response time was significantly slower than when she saw the red A.

D According to Rich, much of the research is anecdotal and has relied on self-support. All perceptual experiences are subjective, which poses a challenge for the study of synaesthesia. Using Magnetic Resource Imaging, the team recorded brain images from a group of synaesthetes and non-synasthetes as they performed a series of visual tasks to find out which area of the brain are involved. The study found that in people with synaesthesia many areas of the brain were active during the experiment. Rich concluded that 'Ultimately this research will help to reveal how we bind perceptual information from all five senses, information that is normally processed in different parts of the brain. Synasthetes have this remarkable experience that the rest of us don't have. We want to find out how and why.

Adapted from *Science Daily*