

Physical Activity Guide

Integrate movement systematically (at work, school, home) to prevent sitting for more than 20 minutes at a time. CDE requires 600 hours of physical education for elementary students each year (that's 3 minutes a day.) The instant muscles begin working blood flow increases. Neurotransmitters that drive memory, learning, and reasoning allow sophisticated thinking and all the incredible insight we are after.



- Physical activity improves processing speed, memory, and executive function the most with acute bouts of moderate to vigorous activity...with the most benefit following the activityⁱ
- More neural networks connect and increase successful integration of important information in our daily life allowing better learning, memory, comprehension, social interaction and especially attention to the task.ⁱⁱ
- Sitting more than 3 hours daily increases all mortality over the 9-year study, but the weakest immune system increased odds of surviving cancer with recreational activity.ⁱⁱⁱ
- Exercise increases BDNF, the neurotropic factor responsible for all neurogenesis, new memories, and learning^{iv}. Movements that repair DNA also repair brain damage from stroke, trauma, mental illness, and neurodegenerative disease by stimulating new growth.
- More time is beneficial but vigorous is better with 45 to 60 minutes, *but as few as 11 to 20 minutes spikes cognition.*^v

Look for every idea to bring in movement, modify so it is possible to do in a remote setting. Use points to quantify their efforts. Some people are especially motivated by “competition” and those who are not need the practice. This chart is your template for adding movement, you can substitute as you need.



Guiding Chart for Activities and Point Keeping

Physical Activities <i>Fitness/play/coordination</i>	<i>Number of Repetitions</i>	5 Points Non-stop	4 Points Stopped once	3 Points Stopped twice	2 Points Stopped thrice	1 Point Stopped 4+
Jumping Jacks or Rope	30					
Mountain Climbers	30					
Sit-ups/Push-ups						
Frisbee to Target						
Toss with a Partner						
Balance on one foot	30 seconds 10 seconds with closed eyes					
Walk a beam	Backwards with eyes closed					

ⁱ Abdelkarim, et. al., (2017). Relationships between motor and cognitive learning abilities among primary school-aged children. Alexandria Journal of Medicine.

ⁱⁱ Erickson, K., Hillman, C., Kramer, A. (2015). Physical activity, brain and cognition. Behavioral Sciences.

ⁱⁱⁱ Campbell, et. al., (2013). Associations of recreational physical activity and leisure time spent sitting with colorectal cancer survival. Journal of Clinical Oncology.

^{iv} Verhoeven, et al., (2014). Cellular aging in depression: Permanent imprint or reversible process? An overview of the current evidence, mechanistic pathways, and targets for interventions. Prospects & Overviews. Bioessays.

^v Erickson, K., Hillman, C., et. al., (2019). Physical activity, cognition, and brain outcomes: A review of the 2018 physical activity guidelines. American College of Sports Medicine.