

How Smart Devices Are Hurting Your Body

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Feeling like your shoulders are tense, your neck is strained or your wrists are painful? Are you frequently on the computer or hunched over your iPad or tablet? New research shows that smartphones and tablets are to blame for some muscle stiffness and strains.

Spending frequent hours on a computer can result in neck strain from pushing your neck closer to the screen, painful wrists from incorrect position on the keyboard, and tense shoulders from hunching forward or sitting still. These problems can also come from any number of the new IT devices that have hit the market in recent years.

Children who are heavy video gamers can suffer high levels of stress to their shoulders or knees due to the quick gestures required from game controllers.

Touch screens that require users to keep their arm in an extended position for prolonged periods can also experience muscle fatigue known as "gorilla arm."

Additionally, frequent and rapid texting can sometimes cause a strained thumb.

Researchers in Saarbrücken, Germany have developed a technique that simulates the lifelike way that muscles and joints are strained when using technological devices. This project is particularly useful of product designers who can use the knowledge to design better devices that put less strain on the human body.

Occupational physicians will also benefit from this technology by using it to improve workplaces.

The technique, "combines three-dimensional motion capture with biomechanical simulation," explains Myroslav Bachynskyi, a PhD student working on the project.

To show the stressed areas, the simulation program looks at three different parameters: the joint angles, the forces acting on the joints at any time during movement, and muscle activation and fatigue.

Preliminary research has shown that movements from left to right and top to bottom are less stressful than forward and backward movements. Therefore, a virtual keyboard is best positioned in the lower central part of the screen.

Until all our technological devices are ergonomically functional, take a break from sitting at the computer every 20--30 minutes to stress or do light exercise. Maintain good posture at the computer and make sure your chair, desk, computer, and keyboard are all at appropriate angles.

If you are experiencing neck, back, hand, thumb, or any other kinds of muscle or joint pain, visit your local chiropractor to find what can be done.