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# Handheld Tablets: A Preventive / convenience tool or a health risk.

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The tablet is fast emerging as the preferred device for working, gaming, entertainment and social networking.

Godrej Interio Ergonomics Cell explores whether this is a good development OR is there a hidden monster beneath this attractive cover?

While there is currently no scientific research on the effects of usage of tablets, this white paper aims to make users aware of the risks associated with long duration working with tablet and ways to mitigate those risks

Wellness@work is a Godrej Interio initiative committed to helping improve the health of employees in modern workspaces.

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**Godrej Interio Ergonomics Cell**

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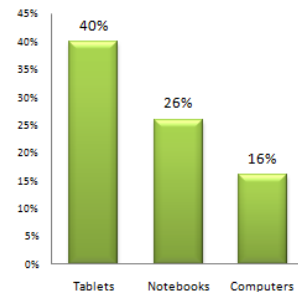
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### The spread of the Tablet

Look around and you will see it everywhere: in offices, at restaurants, in airports, even in bedrooms!

The tablet has become immensely popular as it provides a new combination of high portability, connectivity and user friendly interfaces for gaming, social networking & entertainment through their integrated touch-screen displays.

A recent study undertaken by Manufacturers Association of Information Technology (MAIT) stated tablet sales in India were expected to cross 1.6 million units in 2012, a growth of 40% over the last year.



The Association estimates that the tablet market in India would grow to 7.3 million units by 2015-16, with the tablet emerging as the preferred device for entertainment and content consumption. This boom in the Indian market is in pace with the growth of the tablet market overseas.

A particular area of concern for India is the fact that unlike the other technology devices, the tablet has made inroads into the corporate, personal use and student segment simultaneously.

Further, the Indian government declared it would make technology and education available to rural India through its own version of a cost effective tablet. Currently, a few chosen CBSE and ICSE school children, some as young as ten, are using AKASH tablets as a learning tool as part of the Government trial.

The sudden widespread use of this device, one that is still new, has got the ergonomists at Godrej Interio Ergonomics Cell worried about the possible damages including MSDs that these devices can cause.

The researchers at HSPH strongly believe that, extensive unguided use of the tablet can be injurious to neck and back muscles, especially in cases of young children. Once damaged, these muscles could take a long time to heal.

### Cause for concern

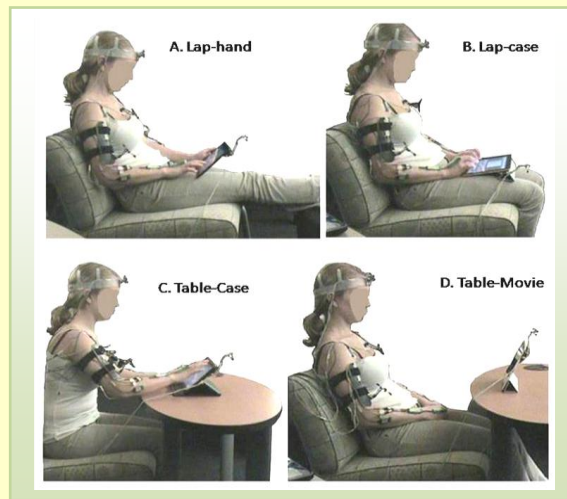
Ergonomists at Godrej Interio believe that though the Tablets may not completely replace the laptop / desktop , its usage for an extended period of time at a stretch can cause the users hidden damage.

Here’s a look at a study done by Harvard School of Public Health (HSPH) titled “ **Touch-screen tablet user configurations and case-supported tilt affect head and neck flexion angles**” , by *Justin G. Young, Matthieu Trudeau, Dan Odell, Kim Marinelli, & Jack T. Dennerlein*

Source: <http://www.hsph.harvard.edu/news/features/features/ipad-ergonomics-dennerlein.html>

The aim of this study was to determine how head and neck postures vary when using two media tablet computers in four common user configurations. The four configurations were:

- A. on the lap and held with the user’s hand (Lap-Hand)
- B. on the lap and in a case (Lap-Case)
- C. on a table and in a case (Table-Case)
- D. on a table and in a case set at a high angle for watching movies. (Table-Movie)





Working for long periods of time with the head slumped forward and the neck flexed can result in neck pain.

### Research Findings

- The researchers at HSPH found that study participants' heads and necks were in more flexed (strained) positions while using the tablets than those typical of desktop or notebook computer users.
- Working for long periods of time with the head slumped forward and the neck flexed can result in neck pain.
- Users held their heads in the most neutral positions when sitting in the Table-Movie configuration.
- Head and neck posture during tablet computing can be improved by placing the tablet higher to avoid low gaze angles (i.e. on a table rather than on the lap) and through the use of a case that provides optimal viewing angles.

\* However further in-depth research need to be conducted on various aspects like battery exposure, interface design and user navigation for better understanding of this tool's impact on user health.

### Potential health hazards of using the tablet

The tablets offer convenience due to its smaller size and weight. However, the user interface (touch screen) of the tablet requires carefully controlled handling and usage. Also the screens of these devices are normally adjusted to a brighter level.

Ergonomists at Godrej Interio believe that continuous exposure to such small and brightly lit devices forces users to adopt unnatural and stiff arm and fingers extension and viewing postures.

These concerns become more alarming in the light of increased time that both adults and children are spending working / socializing / gaming on the tablet.

They believe that such over exposure is raising the risk to the health and safety of the adults and more particularly the young children to an especially high level and the resultant damage could take a long time to heal.

All users and decision-making authorities in workspaces, educational institutions must note that extensive use of the tablet can:

- Cause chronic pain in the neck and shoulders
- Cause damage to muscles in the back and elbows
- Cause soreness in fingertips due to continued touch-screen usage

### Safe Tablet Usage Tips

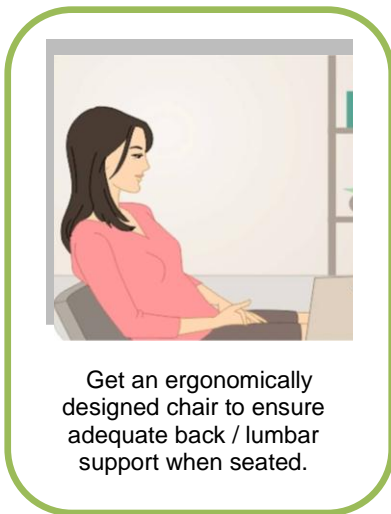
While there is no debating the usefulness / convenience of this gadget, following a few basic tips in selection and usage can ensure the safety and health of the user.

Selection Tips:

Primary Usage	Recommended Tablet Selection
Social Networking	7"
Gaming	10"
Work Related	10"

Usage Tips:

1. **Plan for appropriate usage:** Do not use the tablet to replace the personal computer for regular work.
2. **Limit your use of the tablet at a stretch:** Take a break every thirty minutes and stretch your muscles by taking a short walk /frequently changing your body posture to avoid muscle strain.
3. **Invest in Ergonomic Accessories & Keyboard:** Invest in appropriate compatible external keyboard , mouse, stand to help adopt correct working & viewing posture.
4. **Get an ergonomically designed chair** to ensure adequate back / lumbar support when seated.
5. **Pay attention to any aches and pains** that develop while using of the gadget. Speak to your organization’s health officer to better understand what is causing the pain.
6. **Use discretion while giving the gadget to children** and limit its use by them to not more than an hour at a stretch.



For any further details on this White Paper, please feel free to get in touch with our Ergonomics Cell at [wellness@godrej.com](mailto:wellness@godrej.com) or call us on +91 22 6796 2467 / 2468 / 3421.