With popularity of the television show "Mad Men," 1960's themes such as war, racism and sexism are memorialized, as are once-common habits such as smoking. Women were marketed in the 1960s with their own cigarette brand that had the catch phrase, "You've come a long way, baby." Following release of Smoking and Health: Report of the Advisory Committee to the Surgeon General of the United States, all smoking-related advertising was banned from TV in 1971.

Sitting down dentistry also evolved in the 1960's. "You've come a long way, baby" is gone from advertising, but it remains an accurate slogan when it comes to ergonomics in dentistry. We have come a long way, but for many dental professionals, that's still not far enough.

In 1967, pilots developed the concept of the checklist after planes began crashing, dental professionals may not be crashing in the literal sense, but many clinicians have been forced into early retirement because of musculoskeletal disorders (MSD) or continue to try to work through them. By incorporating a checklist concept similar to that used in the aviation industry, pain may be avoided and nearly all activities of daily life so challenging are possible.

Pain in dentistry

Pain of dentistry is a common fear among the public. Pain in dentistry is considered to be nothing to do with the patient. The individuals having pain in dentistry are the practitioners. It is estimated that more than half of practitioners have some kind of painful musculoskeletal disorder that is work related. In 2007, the Centers for Disease Control (CDC) indicated they had shortened their work hours as a result of their discomfort or injury or illness. Figure 1 shows the types and percentages of occupational injury or illness experienced. More than half (53%) used medication to control the discomfort and nearly half (49.5%) indicated they had shortened their work hours as a result of their injury or illness.9 Ergonomics evolved as a recognized field during World War II. It is the science of adjusting the work environment to the worker. The Occupational Safety and Health Administration (OSHA) has links to ergonomic information.10 The American Dental Association (ADA) published Introduction to Ergonomics11 with suggested interventions and in 2011 published Ergonomics for Dental Students.12 The ADA website has an ergonomics section with links to checklists and articles specific to dental professionals.13

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**Static vs. dynamic seating**

For sitting positions, there are two more checklist considerations. In traditional chairs, the practitioner sits in a static position that does not provide much movement or stimulation. Getting up and down is the only movement given to some of the advanced-design chairs. Dynamic seating offers dynamic stimulation that is the option of movement, allowing the muscles to help strengthen the body’s capability to move. In some dynamic stools the seat pan moves forward and backward as the cylinder moves, creating a decreased blood flow through the muscle. Blood flow eventually occurs and helps heal the muscles by delivering oxygen to the muscle and removing waste products in the muscle that might otherwise cause localized, intense pain (Fig. 4). When the seat pan moves, with others it is the seatback that moves forward and backward as you move with some of the chair movement. In any case, these chairs help strengthen the body’s core.

**Seating materials**

A chair can be made of rubber, plastic, leather, mesh or other materials that may or may not be breathable. Materials can make a difference in comfort depending on the individual. For example, if you sit on a hard chair, the seat, and if there is high humidity in the office, a practitioner might complain about the material of the seat. If there is sweating while sitting, the seat may not allow the legs and back to breathe. This can be uncomfortable and/or embarrassing. Asking the manufacturer about options for breathability is the best choice. There are new fabrics that control odor and breathability is the best choice. There is an increased awareness of the material of the seat. If your office, a practitioner might complain about the material of the seat. If there is sweating while sitting, the seat may not allow the legs and back to breathe. This can be uncomfortable and/or embarrassing. Asking the manufacturer about options for breathability is the best choice. There are new fabrics that control odor and breathability is the best choice.

**With or without arms**

Many practitioners wonder if they should have arms on their chairs. The answer depends on how well the practitioner fits on the chair. If the practitioner’s arms are always flapping in the breeze because the patient isn’t seated properly, then arms on the chair will not help. It is imperative for the patient to either lay back in the appropriate position, or the practitioner must stand. One suggestion is an added “don’t put the chair back and get lost,” the practitioner says. “Let’s put the chair back and get both of us comfortable.

They are very similar phrases with very different meaning. Patients are not the only ones who need to be comfortable; the best work can happen when everyone is comfortable.

How many times during the day do practitioners stop to get comfortable? Usually not. Health care providers often worry more about patient comfort and end up compromising themselves all day long, leading to pain and injury.

**Goldlicks theory of seating**

Chairs are often inherited from someone else when first entered in a different position. Steve Knoll’s theory is the favorite old story. It’s a short, simple and not much how it is adjusted, it is still not just. Not getting the right position will lead to pain and other issues. Many companies can exchange the cylinder on the chair for different heights to make it just right. Checking with the manufacturer to make sure the cylinder or the chair is the best way to find out if the cylinder can be changed to create the comfort. The important lesson is Don’t just try to live with it; it hurts, the patient, the patients, and eventually, the practice’s bottom line. Considering alternative seating may be the best choice. Creating a checklist for buying a new chair (Table 2) will allow you to find the best one for your needs. A new chair may be needed because some chairs can’t be jury-rigged enough to fit other items also play a part. Some patients chairs are extremely wide, or our patients can be very bad. This can make it impossible to work close enough when seated in a traditional stool. The best stool allows much closer access to the patient, so tasks can be accomplished much more comfortably.

The professional should not have to reach more than 15 inches. The light, instruments on the bracket, the headlights, the computer or anything needed for patient care should not need to be fished from armpit reach. Straining for items stresses the muscles in the neck and shoulder. The biggest culprit is the overhead light. A light attached to loosers is no longer on the list of things necessary for a healthy ergonomic armamentarium.

**Checklists and the culture of teamwork**

Hospital checklists are saving lives. Half or more of those reading this article already have MDs; the other half are probably accomplishing damage but haven’t reached critical mass to experience symptoms. Dental professionals are caring individual who don’t have to hurt themselves to help others. Ultimately not sitting comfortably hurts the practitioners, the patients, and the practice bottom line. With simple ergonomic seating checklists professionals can be more successful at practicing in a pain-free environment.

**References**


