



## The Importance of Measuring Blood Pressure in Dental Offices

Dental care professionals realize that the key component of any thorough dental hygiene appointment is patient assessment. While there are several tools used for conducting screenings and examinations for oral health, other aspects of patient health that may be related to dental health are often overlooked. A patient's blood pressure is one of these parameters. Appropriate monitoring of blood pressure can not only improve outcomes of dental care but can also play a role in improving the overall health of patients.

According to the American Heart Association (AHA), hypertension (blood pressure classified as 140/90 mmHg or above) is the most common primary diagnosis in the United States, affecting nearly one out of every three Americans, and is still the leading cause of death in the United States (AHA, 2008). Hypertension is a major risk factor associated with many cardiovascular diseases and plays a significant role in the progression of congestive heart failure, stroke, heart attacks, kidney failure, and premature death. Factors that contribute to the prevalence of hypertension are smoking, stress, drugs, alcohol, nutrition, diabetes, obesity, and limited physical activity.

Because hypertension has become a prevalent concomitant condition, the American Dental Association (ADA) recommends that all dental care providers be involved in the detection and management of hypertension. The ADA recommends that dental offices should take blood pressure on all new patients and annually on all recalls. Patients with hypertension should be monitored throughout each dental visit during which complex procedures are performed, since elevations of blood pressure can increase a patient's risk of experiencing a stroke or myocardial infarctions in the dental chair (Thompson et al., 2007; Herman et al., 2004). Furthermore, local anesthetics that contain epinephrine or other vasoconstrictors can increase blood pressure or the development of an arrhythmia, which is dangerous to patients with hypertension (Gurenlian, 2007; Thompson et al., 2007).

Several studies have shown that dental care professionals can play an important role in a patient's overall health by measuring blood pressure, potentially identifying undetected or uncontrolled hypertension, and referring individuals to their physicians when treatment is indicated (Greenberg et al., 2007; Thompson et al., 2007; Schaffer et al., 2001). Dental hygienists are in a unique position to assess blood pressure and increase a patient's awareness about the risk associated with hypertension since hygienists have regular contact with patients due to frequent care intervals. Unlike physicians, whom patients only visit when they are ill or undergoing a diagnostic procedure, dental patients usually are not experiencing a systemic illness when visiting the dentist and usually consider themselves healthy during dental visits (Thompson et al., 2007). Therefore, dental hygienists have a great opportunity to educate their patients on the health risks associated with hypertension, recommend appropriate lifestyle modifications, and promote healthy lifestyles.

Since blood pressure is a significant factor in a person's overall health, it is important to know exactly what blood pressure is. Blood pressure refers to the force exerted by circulated blood on the blood vessels. A blood pressure measurement is reported as the systolic pressure over the diastolic pressure in

millimeters of mercury (mmHg). Systolic pressure is the peak pressure in the arteries which occurs when the heart contracts. Diastolic pressure refers to the lowest pressure in the arteries which occurs when the heart muscle is at rest between heart beats. Normal or optimal blood pressure measurements are considered to be less than 120/80 mmHg.

Although blood pressure is very important to a person's health, accurately measuring blood pressure is difficult. While the mercury manometer remains the "gold standard" in blood pressure measurement (Jones et al., 2003), there are several factors that can affect the accuracy of blood pressure measurements using a manometer. These factors include untrained observers, poor quality stethoscopes, improper cuff size and placement, a deflation rate faster than 3 mmHg per second, improperly calibrated devices, and digit preference (Pickering et al, 2005). To overcome these common sources of human error, automated blood pressure monitors were developed to provide a more user-friendly and objective method for measuring blood pressure.

With a variety of automated blood pressure monitors on the market, it may be hard to decipher which monitor is most suitable for a dental office. There are three important factors to consider when purchasing a device:

- **Accuracy and Ease of Use.** Automated monitors can be easy to use and require very little training (except for proper cuff sizing and placement). The monitor you choose should offer features that remove the sources of human error identified above, and give an objective measurement across all patients.
- **Clinical Validation.** The most common automated devices on the market are non-certified devices, and some have been notorious for their inaccuracies. Automated blood pressure devices that are certified have passed the Association for the Advancement of Medical Instruments (AAMI) validation protocol or a similar standard. Since regulatory agencies do not require the use of AAMI-validated instruments in the health care industry, there is nothing to prevent the sale of non-certified blood pressure devices to hospital, clinics, or individuals.
- **Manual Mode for Auscultatory Readings.** It's important to have a manometer as a backup method for measuring blood pressure since there are some patient conditions (e.g., arrhythmias) and certain patient groups for whom automated monitors do not function well (Jones et al, 2003).

ADC offers a solution that addresses the issues with both automated and manual blood pressure devices. The ADView 2 is a portable, fully automated, AAMI-validated blood pressure device with the convenience of a manual mode that allows dental care professional to take traditional blood pressure readings with a stethoscope, if desired. The ADView 2 features a modern, compact design that's self-standing for desktop or tabletop use, with desktop caddy, wall mounting, and mobile stand solutions also available. The ADView 2 provides an easy method to measure blood pressure so that dental care providers can play an important role in improving the overall health of patients.

## References

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