



# Health Promotion for Injury Prevention

## Smoking

There are two subjects that are difficult but important to address with clients in the clinic. Smoking is one of the two. As therapists, we do not want to "preach" but to provide information that helps you make decisions regarding your health.

Nicotine can have such an impact on healing that I have known physicians who told their smoking patients with injuries that compromised circulation and blood flow that they must quit or there would be no point in performing a surgery because it would fail.

## Nicotine

- increases carbon monoxide levels in the body by 2-4 times reducing energy and increasing fatigue
- causes a fight-or-flight reaction
  - increases heart rate by 10-20 beats
  - increases blood pressure by 10-20 degrees
  - releases adrenaline and causes blood sugar to rise
- is a stimulant (after an initial, momentary chemical release that causes a sense of relaxation) that can increase muscle tension and anxiety
- constricts capillaries and blood vessels
- interferes with the body's ability to store calcium
  - increases risk of osteoporosis
  - delays healing of fractures
  - increases risk of musculoskeletal problems including disc degeneration
- impairs sleep patterns (initially after quitting, the ex-smoker may experience several nights of "twitching and jumping" until the body adjusts to the new deeper sleep pattern)



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You can reap benefits from quitting smoking after only a short time

- **Within 20 minutes:**
  - blood pressure drops to normal
  - pulse rate drops to normal
  - body temperature of the hands will increase to normal
- **After 8 hours:**
  - carbon monoxide level in the blood drops to normal
  - oxygen level in the blood increases to normal
- **After 48 hours:**
  - Nerve endings begin re-growing
- **After 2 weeks to 3 months:**
  - circulation improves
  - lung function increases up to 30 percent



## Obesity

The second topic that is sensitive to bring up in the clinic is obesity. I have had a client who changed physicians because the first doctor dared to tell her that her weight might have an impact on her symptoms. Unfortunately, more and more evidence is accumulating that obesity and body mass are statistically related to carpal tunnel syndrome. Those who are overweight are 2 1/2 times as likely to develop symptoms as those who are normal weight.



## Alcohol Use

There are some clients who use alcohol as a pain reliever. Although alcohol will act as a muscle relaxant, it does not have any actual analgesic (pain killing) effect and can negatively impact healing if abused. It can be dangerous to mix alcohol with other drugs.

## Alcohol

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- ✓ is a major depressant
- ✓ can be habit-forming (addictive)
- ✓ contains sugar and other carbohydrates which cause weight gain
- ✓ increases joint pain
- ✓ impedes deep, healing sleep patterns
- ✓ impedes absorption of calcium in the body



## Stress

Stress is a "fight-or-flight" arousal response in the body caused by a challenge, either positive or negative.

## Stress

- ✓ increases heart rate
- ✓ increases blood pressure
- ✓ increases muscle tension
- ✓ can increase pain



## *Positive stress*

- ✓ lasts for a short while
- ✓ prepares you for a challenging task and increases productivity
- ✓ allows the body's responses return to a relaxed state after the challenge is over

## *Negative stress*

- ✓ causes prolonged tension in the body with no return to the relaxation state

**To maximize your body's ability to prevent or recover from injuries, it is important to learn methods of reducing negative stress. Some ideas:**

- ✓ **Change the body's immediate response**
  - deep breathing
  - shoulder circles
  - take a mini-break to get away from the situation

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- ✓ **Develop strategies to help the body return to a relaxation state**
  - progressive muscular relaxation or relaxation tapes
  - biofeedback
  - exercise
  - perform enjoyable activity and hobbies
  - listen to relaxing music
- ✓ **Develop healthy life-style practices so the body copes better with stress**
  - eat well
  - exercise
  - get adequate rest
  - develop a good support system
  - Stop smoking, drink alcohol in moderation

## Drinking water

- ✓ **Aids with weight loss**
  - Allows body systems to function at an optimal level
  - Gives you the energy you need to exercise
  - High-water volume foods are more satisfying and filling
- ✓ **Helps the body flush out toxins**
- ✓ **Protects joints and muscles**
  - Aids in the lubrication and cushioning of the joints and muscles protecting them from shock and damage
  - A dehydrated body is more susceptible to damage
  - Helps reduce cramping of the muscles and early onset of fatigue



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## Diaphragmatic Breathing

Most people tend to breathe using the muscles of the neck and shoulders rather than the diaphragm. Work activity, sedentary activity, and stress increase this tendency. With time, this type of shallow breathing can affect blood flow and nerve and muscle function. Diaphragmatic breathing relaxes the muscles of the neck and shoulders.

Practicing diaphragmatic breathing daily will improve the strength of the diaphragm and improve the quality of out breathing.

- Improves oxygen flow to the body's tissues
  - Reduces stress
  - Relaxes the muscles of the neck and shoulders
  - Lowers blood pressure and heart rate
  - Retrains the body to breathe correctly
- ✓ Place a hand on your upper abdomen.
  - ✓ Inhale deeply through the nose. You will feel your hand rise as the diaphragm expands.
  - ✓ Exhale slowly through the lips and gently push in with the hand that is on the diaphragm.
  - ✓ While exhaling, relax your neck, shoulders and chest.
  - ✓ Repeat slowly for 5 minutes.

