NATIONAL REVIEW COURSE

Massage Application

Technique

I. Physiologic Effects of Massage

A. General effects:
   1. Breaks down adhesions or scarring.
   2. Increases flexibility and mobility.
   3. Increases joint range of motion.
   4. Balances pH levels.
   5. Reduces pain and inflammation.
   6. Increases cellular metabolism.
   7. Increases skin temperature and blood flow.
   8. Promotes hormonal release with systemic effects.
   9. Removes toxins and metabolic wastes.
   10. Chemically induces vasodilation.
   11. Improves overall blood and lymph circulation.
   12. Hastens healing.

B. Effects on the circulation system:
   1. Assists delivery of oxygen and nutrients to cells.
   2. Removes toxins and metabolic wastes.
   3. Promotes vascular health and flexibility.
   4. Affects heart rate and blood pressure.

C. Effects on the lymphatic system:
   1. Augments the circulatory system by returning interstitial fluid (lymph) to the blood by way of muscle contraction.
   2. Opens lymph channels for better flow.
   3. Reduces edema.
   4. Increases urine volume and excretion.

D. Effects on the integumentary system:
   1. Increases blood flow to the skin, which improves its health and condition.
   2. Causes a rise in skin temperature and perspiration.
   3. Facilitates sebaceous gland secretions.

E. Effects on the muscular system:
   1. Stretches or broadens muscles.
   2. Promotes muscle relaxation.
   3. Improves muscle tonus.
   4. Relieves muscle spasms, cramps, and pain.
   5. Improves athletic performance.
   6. Promotes healing.
   7. Increases flexibility.
   8. Improves motor function.

F. Effects on the nervous system:
1. Reduces or alleviates pain directly, chemically, and via the nervous response.
2. Promotes homeostasis in the parasympathetic and sympathetic systems.
3. Promotes natural release of pain killers (i.e. endorphins).

G. Effects on the respiratory system:
1. Reduces stress and anxiety associated with respiratory problems.
2. Relaxes muscles required for the breathing process.
3. Promotes fluid removal from the lungs (certain percussion techniques).

H. Effects on the immune system:
1. Increases T cytotoxic cells (killer cells), which decrease anxiety and increase relaxation.
2. Reduces stress, which has a direct effect on the immune system and the parasympathetic nervous system.
3. Reduces cortisol (stress hormones), which affects immune system function.

II. Emotional Effects of Massage
A. Psychological benefits:
1. Reduces stress or perception of stress.
2. Encourages better nutrition, exercise, and health practices.
3. Reduces pain, both physical and emotional.
4. Reduces fatigue, both physical and emotional.
5. Increases productivity and morale.
6. Promotes a sense of confidence and control.
7. Promotes deep relaxation.
8. Promotes feelings of being healthier, more relaxed, invigorated, energetic, peaceful, and even more youthful.

III. Manual Contact and Manipulation
A. Qualities of touch:
1. Direction of movement – massage strokes can be applied in three general directions:
   a. Centrifugal – movement away from the heart; following arterial flow.
   b. Centripetal – movement toward the heart; following venous flow.
   c. Cross-fiber – working perpendicular to natural muscle fiber directions.
2. Pressure – the amount of pressure or depth (deep, medium, light) and drag or pull; further broken up into rate (speed) and rhythm (intervals) of movement.
3. Lubricants or instruments – the necessary oils, lotions, massage table and other tools, stones, hot and cold packs, and other instruments.
4. Frequency and duration – frequency of treatments and the time spent during each treatment.
5. Physical positioning – positioning of both the client and the practitioner.

B. Swedish Massage
1. Five basic strokes of Swedish massage:
   a. Effleurage
   b. Petrissage
   c. Friction
   d. Tapotement
   e. Vibration
2. Movements faster than the heart cause stimulation, and movements slower than the heart cause relaxation.
3. Effleurage (gliding) – most widely used stroke; long gliding stroke toward the heart; used to evaluate the client.
   a. Nerve strokes
   b. Feathering
4. Petrissage (kneading) – manipulates the flesh away from the body; assists in removal of metabolic wastes, breaking up adhesions, promoting fluid movement, stretching and broadening muscle tissue and fascia, revitalizing dry skin, and rehabilitating weak muscles.
   a. Chucking – grasping flesh with one hand and moving the hand up and down along the bone while the other holds the limb steady.
   b. Rolling – using both hands to compress the muscle to the bone and then rolling it back and forth.
5. Friction – uses direct pressure on the skin and a vigorous rhythmic movement using the fingers and palms; joints and bony areas of the body receive the greatest benefit from friction; warms tissues, stimulates fluid movement, promotes flexibility, and breaks down adhesions.
   a. Circular friction – small circular movements to promote circulation and stimulate nerves and muscle tissue.
   b. Deep cross-fiber friction (transverse friction) – applied perpendicular to muscle fibers in an effort to break up scars, adhesions, and fibrous tissue.
   c. Parallel stroke – stimulates underlying tissue and reduces adhesions.
   d. Pumping (or compression) – for fleshier parts of the body; increases circulation, breaks down deposits in fascia, and promotes circulation and joint flexibility.
6. Tapotement (percussion) – uses rapid, alternating striking or percussive movements; highly stimulating in promoting muscle tonus, stimulating tissue repair, increasing circulation, and loosens phlegm and increases expectoration in respiratory tract conditions.
7. Vibration – highly rhythmic shaking or trembling of surface tissues of the body; reduces the intensity of deep tissue work, soothes and relaxes when applied lightly, stimulates when applied vigorously.

IV. Joint Mobilization Techniques
A. Muscle Energy Techniques – a group of neuromuscular techniques that involve voluntary contraction of a specific muscle or muscle group while positioned in a specific direction; contractions can vary in intensity and duration; these are client-active techniques to achieve a corrective outcome.
B. Positional Release Techniques – involve specific body parts positioned to isolate a muscle, tendon, ligament, or joint to achieve a release.
C. Strain-Counterstrain – uses the palpation of tender points (or trigger points) to guide the positioning of the body to reduce the tenderness, thereby promoting the muscle tension to release on its own; also describes the contraction of an antagonist muscle to allow the associated prime mover muscle to release.
D. Stretching – promotes lengthening or extension of a muscle or muscle group.
   1. Purposes of stretching:
      a. Increase and maintain a more complete range of motion.
      b. Relieve muscle and joint soreness.
      c. Improve mobility and flexibility.
      d. Lengthen fascia and improve elasticity.
      e. Prevent reinjury and strengthen tissue.
      f. Increase tissue temperature by stimulating metabolism.
      g. Promote blood flow to bring nutrients to tissues and remove metabolic wastes.
   2. Proper stretching technique:
      a. Move slowly and rhythmically.
      b. Breathe slowly and rhythmically.
      c. Exhale on the stretch and inhale when relaxed.
      d. Stretch until a mild tension is felt.
      e. Do not overstretch, because it is counterproductive.
      f. Avoid ballistic (bouncing) stretching, because it can cause tissue strain.
   3. Types of stretching:
      a. Static stretching (assisted) – therapist gently assists the client in stretching until resistance is met and holds the stretch until release is felt (about 10 to 20 seconds).
      b. Static stretching (unassisted) – the client stretches into resistance and applies light contraction.
      c. Proprioceptive neuromuscular facilitation – an assisted stretching technique in which a muscle is stretched into resistance and held for 5 to 10 seconds; then the client contracts the muscle involved isometrically for 5 seconds; the process is repeated three to four times.
d. Ballistic stretching – involves bobbing or bouncing during the stretch using body weight; not recommended because of the possibility of muscle strain and small muscle tears.

e. Passive stretching – slow, steady, gently movement to lengthen muscles when natural resistance is minimal.

f. Reciprocal inhibition stretching – involves contracting the muscle that is the antagonist to the one being stretched thereby telling the body to relax the muscle being stretched; useful for reducing muscle cramping.

**Hydrotherapy**

V. **General Terminology**

A. Body Temperatures:
   1. Core temperature – 98.6°F (37°C)
   2. Skin temperature – 92°F (33.3°C)

B. Water Temperatures:
   1. Dangerously hot – 110°F or above.
   2. Very hot – 105°F to 109°F.
   3. Hot – 100°F to 104°F.
   4. Warm – 97°F to 100°F.
   5. Neutral – 94°F to 97°F.
   6. Tepid – 80°F to 92°F.
   7. Cool – 70°F to 80°F.
   8. Cold – 55°F to 70°F.
   9. Very cold – 32°F to 55°F.

C. Energy Transfer:
   1. Conduction – when a variable temperature is transferred from one object or substance to another through direct contact.
   2. Convection – when temperatures are transferred through moving liquids or gases.
   3. Conversion – when energy is transformed from one type to another (i.e. electricity in a lightbulb is transformed into heat and light.)
## VI. Effects of Hydrotherapy

<table>
<thead>
<tr>
<th>Effect</th>
<th>Heat</th>
<th>Cold</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td>Promote circulation of blood and lymph</td>
<td>Reduce inflammation and secondary injury</td>
</tr>
<tr>
<td></td>
<td>Relieve cramp and muscle spasm</td>
<td>Relieve pain</td>
</tr>
<tr>
<td></td>
<td>Relieve stress, both mental and physical</td>
<td>Relieve muscle spasms</td>
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<tr>
<td></td>
<td></td>
<td>Promote healing</td>
</tr>
<tr>
<td><strong>Local</strong></td>
<td>Surface vasodilation and redness</td>
<td>Initial vasoconstriction</td>
</tr>
<tr>
<td></td>
<td>Increase in leukocyte migration</td>
<td>Decrease in circulation</td>
</tr>
<tr>
<td></td>
<td>through cell walls</td>
<td>Decrease in leukocyte migration through cell walls</td>
</tr>
<tr>
<td></td>
<td>Muscle relaxation</td>
<td>Decrease in cell metabolism</td>
</tr>
<tr>
<td></td>
<td>Increase in local sweating</td>
<td>Muscle contraction</td>
</tr>
<tr>
<td></td>
<td>Local analgesia</td>
<td>Numbing, analgesic effect</td>
</tr>
<tr>
<td></td>
<td>Increased cellular metabolism</td>
<td></td>
</tr>
<tr>
<td><strong>Systemic</strong></td>
<td>Increase in heart rate</td>
<td>Increase in nervous system stimulation, then sedation</td>
</tr>
<tr>
<td></td>
<td>Increase in nervous system stimulation, then sedation</td>
<td>Initial increase in heart rate, then decrease</td>
</tr>
<tr>
<td></td>
<td>Increase in digestive process</td>
<td>Increase in cellular metabolism</td>
</tr>
<tr>
<td></td>
<td>Decrease in cellular metabolism internally</td>
<td></td>
</tr>
<tr>
<td><strong>Contraindications</strong></td>
<td>Inflammation</td>
<td>Circulatory and heart conditions</td>
</tr>
<tr>
<td></td>
<td>Circulatory and heart conditions</td>
<td></td>
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<tr>
<td></td>
<td>Pregnancy</td>
<td>Pregnancy</td>
</tr>
<tr>
<td></td>
<td>Geriatric</td>
<td>Geriatric</td>
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<tr>
<td></td>
<td>Infant</td>
<td>Infant</td>
</tr>
<tr>
<td></td>
<td>Cancer</td>
<td>Cancer</td>
</tr>
<tr>
<td></td>
<td>Impaired neurologic sensitivity</td>
<td>Impaired neurologic sensitivity</td>
</tr>
</tbody>
</table>

## VII. Reflexive Effects of Hydrotherapy

### A. Reflexive Effects of Prolonged Heat:
1. Heat to one extremity reflexively vasodilates the opposite extremity.
2. Heat to the pericardium lowers blood pressure but increases heart rate.
3. Heat to the chest increases expectoration and relaxes respiration.
4. Heat to the trunk relieves stress on the kidneys, ureters, and gallbladder and promotes production of urine.
5. Heat to the abdomen decreases intestinal blood flow, intestinal motility, and acid secretion in the stomach.
6. Heat to the pelvis increases menstrual flow and relaxes pelvic muscles.

### B. Reflexive Effects of Prolonged Cold:
1. Cold to the nose and the back of the neck causes contraction of the blood vessels of the nasal mucosa.
2. Cold to the scalp and hands causes vasoconstriction of the blood vessels to the brain.
3. Cold to the pericardium decreases heart rate but increases stroke volume.
4. Cold to the thyroid decreases its function.
5. Cold to any arterial trunk causes vasoconstriction of the artery and its branches.
6. Cold to the abdomen increases intestinal blood flow, intestinal motility, and acid secretion in the stomach.
7. Cold to the pelvis increases organ function.

VIII. Applications of Hydrotherapy
A. Fomentation – local application of moist heat.
B. Hydrocollator – a device that preheats silica gel packs to between 150°F and 160°F; the gel packs are then applied for thermal use.
C. Footbath – immersion of the foot using temperatures between 100°F and 115°F.
D. Sitz bath – partial immersion bath for pelvic region.
E. Whirlpool bath – partial immersion bath that uses agitation of water and air to promote stimulation locally.
F. Ice packs – localized application of cold; can be a chemical pack, ice bag, or frozen device.
G. Compress – local use of moist cold.
H. Salt glow – massage using wet salt as a stimulant.
I. Alcohol rub – application of rubbing alcohol to lower the body temperature through rapid evaporation.
J. Russian bath – steam cabinet in which the client’s head protrudes out of the top.

IX. Aromatherapy
A. The use of smells and aromas to enhance or affect moods and memories and alter normal physiology through stimulating olfactory senses.
B. Essential oils – the primary therapeutic element of aromatherapy; extracted liquids from plants.
C. Extraction processes:
   1. Steam distillation – use of steam to expel oils.
   2. Solvent extraction – use of specific additives to separate oils.
   3. Expression – use of direct pressure to expel oils.
   5. Enfluerage – use of squeezing to extract oils.
D. Contraindications – allergic reactions or toxic if ingested.
<table>
<thead>
<tr>
<th>Oil</th>
<th>Effects</th>
<th>Common Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lavender</td>
<td>Promotes healing, stimulates immune system,</td>
<td>Most well known for treatment of burns; natural antibiotic</td>
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<tr>
<td></td>
<td>prevents scarring, increases sedation</td>
<td></td>
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<tr>
<td>Tea tree</td>
<td>Antiseptic, antiviral, antifungal</td>
<td>Candida (yeast) infections, ringworm, sunburn, acne, athlete’s foot, toothache</td>
</tr>
<tr>
<td>Peppermint</td>
<td>Digestive aid, antiseptic, promotes</td>
<td>Stomach ache, indigestion, flatulence, bad breath, toothache, varicose veins</td>
</tr>
<tr>
<td></td>
<td>circulation, anti-inflammatory</td>
<td></td>
</tr>
<tr>
<td>Chamomile</td>
<td>Anti-inflammatory, sedative</td>
<td>Insomnia, anxiety, nausea, fever, depression, burns, sunburns, hay fever, eczema, teething</td>
</tr>
<tr>
<td>Eucalyptus</td>
<td>Anti-inflammatory, antibiotic, analgesic,</td>
<td>Coughs, colds, cystitis, candida, lung congestion, insect repellent</td>
</tr>
<tr>
<td></td>
<td>diuretic, antiviral</td>
<td></td>
</tr>
<tr>
<td>Geranium</td>
<td>Antiseptic, astringent</td>
<td>Menopause (effects of), throat infections, anxiety, endometriosis</td>
</tr>
<tr>
<td>Rosemary</td>
<td>Antiseptic, stimulant</td>
<td>Muscular sprains, arthritis, migraines, headaches, coughs, flu, diabetes, depression, fatigue</td>
</tr>
<tr>
<td>Thyme</td>
<td>Antiseptic, antibiotic, antiviral, diuretic,</td>
<td>Warts, whooping cough, neuralgia, fatigue, acne</td>
</tr>
<tr>
<td></td>
<td>thyroid stimulation</td>
<td></td>
</tr>
<tr>
<td>Lemon (or other</td>
<td>Antiseptic, antibacterial</td>
<td>Tension headaches, insect bites; mood enhancement, water purification, digestion stimulation</td>
</tr>
<tr>
<td>citrus)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clove</td>
<td>Antiseptic, antibacterial, analgesic</td>
<td>Toothaches, muscular disorders, asthma, nausea, digestive problems, sinusitis, anxiety</td>
</tr>
</tbody>
</table>