PART 2. CANCER & MASSAGE THERAPY: contraindications and cancer treatment
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COURSE DESCRIPTION: Effects of cancer treatment are often more powerfully felt than the effects of cancer itself. Massage can be a powerful healing intervention and support for people going through cancer treatment. This course explores the effects of the principal cancer treatments (surgery, chemotherapy and radiation therapy) and examines the massage therapy contraindications for each.

TO TAKE THE EXAM: Go to AMTA's Online Learning site at www.amtaonlinetraining.org.

COURSE OBJECTIVES: Surgery, radiation therapy and chemotherapy are discussed in this article, along with essential contraindications for some common scenarios. When you have completed this course you will be able to:
- List four complications or side effects of surgery.
- Describe how surgery increases risk of deep vein thrombosis (DVT).
- List three areas of the body where lymph node removal or irradiation produces risk of lymphedema.
- Describe how the “Quadrant Principle” modifies massage therapy for risk of lymphedema.
- List five questions to ask a client who is in radiation therapy.
- List three massage contraindications to follow concerning the radiation field.
- Describe the effects on the body when the three blood cell types are suppressed by chemotherapy, and a massage contraindication in each case.
- List three massage adjustments for someone with nausea.
- Describe two massage contraindications for peripheral neuropathy.

CONTACT HOURS: 2.5
The contraindications and adjustments in massage therapy for clients with cancer depend on the type of treatment and its effects.

**cancer & surgery**

**MASSAGE THERAPY**

**CONCERNS DUE TO SURGERY**

This section discusses the most common massage therapy issues after a client has had surgery. These include:
- deep vein thrombosis (DVT) risk;
- infection;
- medical devices;
- constipation;
- lymph node removal and lymphedema risk.

**RISK OF DVT**

Patients are at risk for DVT in the first days to weeks following surgery. As the body heals the surgical incision site, clotting factors—which normally circulate in the blood—increase. This elevates the risk of blood clots forming inside the vessels where they don’t belong. Clotting factors also increase in response to inflammation, which is invariably present at the surgical site. In addition, bed rest causes reduced blood flow and increases the possibility that blood will clot in the large veins in the legs. Nurses take several preventive steps to lower the incidence of postoperative DVT:

* Patients are urged to walk as soon as they can.
* Pneumatic devices, applied to the legs, pump blood when skeletal muscles aren’t actively doing so.

Still, DVT is possible in the weeks following surgery, and massage therapists should avoid massage anywhere DVT risk is elevated. Exactly how long the risk period lasts is unclear. Some more invasive surgeries carry a higher risk of DVT than less invasive ones. The best massage therapy approach is to avoid massage with pressure and joint movement on the lower extremities until the client’s physician has verified that the risk has subsided. Readers are strongly encouraged to read Part I (Summer 2006, mjt) for a summary of DVT risk, working with cancer patients, consulting the physician and planning the massage session. If a clot is discovered, many patients are put on thrombolytics and anti-coagulants. In order to prevent clots from recurring, the blood is thinned or “antiocoagulated” to the point where the patient is then at risk for spontaneous bleeding, though it is unusual to see visible bleeding. However, a massage therapist should understand that deep or vigorous moves might cause small bleeds or bruises. Depending on the tendency to bruise or bleed, massage therapy pressure should be lessened. It’s often best to take input from the client’s physician and nurses about the level of pressure that can be safely tolerated. Avoid ischemic-level compression.

**RISK OF INFECTION**

Infection is another risk of surgical intervention, usually relevant in the days following surgery. Like DVT risk, it is minimized by various medical practices, including the standard use of antibiotics. Infection can occur at the incision site and/or can spread throughout the body. Respiratory infections also occur occasionally after surgery. General signs and symptoms of infection are fever, chills, tiredness, increased pain, tenderness or achiness, and night sweats. Additional signs of infection at an incision site are increased pain, redness, swelling, heat or drainage from the site that changes color.

If you see signs of infection in these clients, you should refer them immediately to the treating physician. Often this means a phone call to the nurse or office listed in the client’s aftercare instructions. If this referral has already taken place and the client is already being treated for the infection, you should work using gentle pressure, without the circulatory intent that characterizes Swedish kneading and stroking. This may be a good time to provide gentle holding or energy therapies and other less stimulating techniques.

**ADAPTING TO MEDICAL DEVICES**

Medical devices include catheters, ports, ostomies and surgical drains. Surgical drains are usually in place during a few days after surgery; other devices are often in for longer. The cardinal approach to medical devices is to avoid disturbing them with massage, movement, draping or positioning. This means avoiding massage strokes in the area, bolstering clients comfortably to minimize pressure on the device, and moving clients carefully, without drawing the drape across them in a way that pulls on the device.

Vascular access devices, such as ports, can generate their own complications. An example of such a complication is blood clot formation in a port, which requires anticoagulant therapy. Some devices can be dislodged by client movement or massage. Other central lines have to be handled with care to prevent infection.

Vascular access devices are being used more and more to deliver chemotherapy. These need to be surgically inserted and require special care. Some clients are still receiving chemotherapy through IV insertion in one or both arms. If this is the case, always inspect the tissues for bruising or irritation, and

* The information in this article is not designed to replace input or permission from a client’s physician for massage. Instead, this article is designed to help massage therapists anticipate the common issues arising in massage for people in treatment.
ask the client and the client's physician about the health of the veins in the arms before using pressure there. Veins can be inflamed and scarred by the process and even be vulnerable to thrombosis.

Space limits discussion of all the medical devices involved in cancer treatment, but you are advised to learn about them by looking up information about them on one of the many websites that describes its function. It is likely that a client can educate you about his or her device, too.

ALLEViating CONSTiPATION
Constipation is a common complaint in the few days following surgery and can be extremely uncomfortable or painful. You may try techniques such as abdominal massage with gentle pressure in the direction of peristalsis. This may be welcomed by the client, but is contraindicated if the abdominal area is the site of cancer, surgery or some other local issue. If this is the case, you may try other gentle pressure or reflexive techniques at other sites to encourage elimination. Short of that, simple, soft abdominal holds may provide relief.

SURGICAL LYMPH NODE REMOVAL
Lymph nodes that drain the tissue where the tumor resides are often removed along with the malignant tissue to determine the extent of cancer spread (metastasis). Together with blood tests and scans, the presence or absence of cancer in surrounding lymph nodes gives physicians a complete picture of the disease status. Depending on the appearance of the nodes and the level of concern, surgeons may remove more nodes, or fewer. Typical lymph nodes removed in breast cancer surgery are shown in Figure 1.

Unfortunately, lymph node removal from some key areas—cervical, axillary or inguinal—can put the individual at risk for another condition: secondary lymphedema. Radiation therapy, which injures the nodes and vessels, can also cause this condition. In lymphedema, swelling occurs in part or all of the area drained by the missing structures. Scarring from surgery or radiation obstructs the flow of lymph, and over time it combines with other factors, such as high protein concentration in the tissues, to create lymphedema.

Lymphedema, with its feeling of heaviness, discomfort and pain, can make its first appearance weeks or even decades after cancer treatment. In the most severe disfiguring cases, the affected limb can enlarge to several times its original size, and congestion can occur in the associated trunk quadrant. The pressure of extra tissue fluid can impair blood circulation, leaving the area vulnerable to infection. Once an individual develops lymphedema it can become chronic. There is no cure.

Years ago, most or all lymph nodes were removed from an area as a matter of course to stop cancer spread. Recently, more conservative approaches are in use. Sometimes only one or two “sentinel nodes” are removed: the first nodes in the path of tumor drainage. If they are negative, then no more nodes need removing. This approach, called a “sentinel lymph node dissection” can lessen one’s chance of lymphedema, although it does not eliminate the risk entirely.

RISK OF LYPHEDEMA
Although lymphedema can occur whenever cervical, axillary or inguinal nodes are damaged or missing, the most is known about lym-
phedema after breast cancer surgery, when axillary nodes are affected. Statistics differ widely about lymphedema risk after axillary node removal, but some state a risk level of 5 to 10 percent. This may increase to 25 percent when mastectomy occurs, or when radiation therapy occurs in the axilla. Other sources state much higher risk after these procedures. Although the risk is much smaller—1 to 3 percent—with sentinel node dissection alone and no radiation, the risk still exists.

But because no one can tell who will develop lymphedema and who won’t, statistics are of limited use. Some people have adequate collateral pathways to transport lymph when principal routes are damaged, but others don’t. The information is hidden from view.

As inexact as the risk is, it is lifelong. No cure is known, although careful lymphatic drainage approaches, combined with judicious bandaging and other techniques, can reduce the size of the limb. Manual lymph drainage techniques used are extremely light, carefully choreographed, and performed by highly skilled therapists. These therapies differ considerably from the deeper pressure, kneading and stroking of traditional Swedish massage and other modalities. Manual lymph drainage techniques are designed to cautiously redirect fluid to functional pathways and are indicated for lymphedema. An individual with chronic lymphedema, or even just one episode of acute lymphedema, will generally be concerned about aggravating or precipitating another episode. He or she may be wearing a sleeve or bandage to compress tissues and minimize fluid buildup in the area, and will be careful to elevate the area where possible so that gravity helps drain, rather than aggravate it.

**DAILY PRECAUTIONS FOR LYMPHEDEMA RISK**

Since many cancer survivors had nodes removed from or irradiated in the cervical, axillary or inguinal areas, massage therapists should avoid kneading, stroking and compression at medium and deep pressures in the areas at risk of lymphedema. The exact areas at risk are addressed below.

For an understanding of these pressure precautions for lymphedema risk, look at the daily precautions breast cancer survivors are often told to take. These are thought to reduce the chances of an episode:

- Do not use the at-risk limb for blood pressure or needle-sticks.
- Do not lift more than 5 pounds with the at-risk limb.
- Do not wear restrictive garments or carry bags on that side.
- No saunas or very hot showers. Do not immerse the at-risk area in hot tubs or hot baths.
- Use care when washing dishes. Rubber gloves are advised to avoid cuts and hot water. Use gardening gloves when gardening to prevent dirt from entering cuts.
- Avoid insect bites, sunburn and oven burns.
- Use good skin care with lots of lubrication on the at-risk side so that skin does not crack or split.

Notice that exercise of the at-risk side is limited to minimize inflammation and microdamage to tissues that is characteristic of muscle strengthening. Exercise, along with saunas and hot baths, also increases circulation to the skin to cool the body, placing demand on existing lymphatics to drain tissues.

Also notice that pressure on the at-risk area, in the form of blood
pressure cuffs or restrictive clothing, is ill-advised. Anything that could cause injury to the tissues or increased circulation is discouraged, to avoid overwhelming existing lymphatic structures by placing too large a fluid load on them. This is thought to reduce the chances of a first episode of lymphedema, which likely can become chronic.

The application of these precautions is widespread, although uneven. Some surgeons urge their breast cancer patients to follow them to the letter, regardless of how many lymph nodes were removed. Others encourage them when more lymph nodes are removed, but not when just a few are taken, or a small area is irradiated. Some advise these precautions for a simple sentinel node dissection, but others do not. And some physicians actually question this common practice. Carolyn Kaelin, a physician and breast cancer survivor, reports that “gradual, progressive strength training” may reduce the risk of lymphedema by opening lymphatics in the area.

I have also spoken with physical therapists and nurses about these precautions, and some hold fast to them, others counter them with the need for movement and exercise. Clearly, there is no consensus in the medical world about preventing lymphedema. Against this backdrop, how do massage therapists adapt their work? Faced with anatomy that is a clear departure from physiological business-as-usual, what should therapists do?

In the most conservative, prevailing view, therapists would do no harm, in line with the activity precautions designed to prevent lymphedema. With that, some massage techniques redden the skin, with certain pressures or frictions. Massage pressures are reminiscent of a blood pressure cuff, and usually more sustained than a brief blood pressure measurement. The pressure of conventional massage may damage superficial lymphatics on its way down to deeper muscles and fascia. Strong joint movements and pressures may cause soreness and a brief inflammation. Bearing these analogies in mind, consider two client scenarios: an individual with a history of lymphedema, and another with no history, but at risk. These are addressed in the next two sections.

**MASSAGE AND CLIENTS WITH A HISTORY OF LYMPHEDEMA**

A client with chronic lymphedema, or even one episode of acute lymphedema, is generally very concerned about minimizing risk of worsening the current state, or precipitating another episode. In this climate, the client tends to be receptive to massage contraindications. He or she may be wearing a sleeve, and is careful to elevate the area, and tends to follow the precautions above. Massage therapists should fit right in with any precautions the client has been instructed to follow.

The safest contact with an edematous limb would be gentle holding with soft hands to include it in the massage. Some therapists may be skilled enough to offer a few lightest-pressure strokes on an unbandaged limb, but most should go with gentle contact. This contraindication extends to the affected trunk area drained by the damaged lymphatics, shown in Figure 2. In addition, all positioning should be to elevate the affected area.

Some lymphatic specialists also argue for strict pressure limits on the contralateral, or opposite corresponding area. Their concern is that the opposite side is comprised of

**WHERE LYMPHEDEMA FORMS**

Lymphedema can form in:

- the face (eyes, cheeks, under chin and so on) or neck after cervical lymph node removal or irradiation.
- the arm and associated trunk quadrant (to the midline, up to clavicle, and down to the lowest level, anterior and posterior) after axillary lymph node removal or irradiation.
- the leg and associated trunk quadrant (to the midline, up to the infrascapular level, anterior and posterior) after inguinal lymph node removal or irradiation.

The complications of lymphedema may affect just a limb, or the associated trunk as well. In breast cancer, all or part of the breast is removed (the more breast tissue removed, the more lymph nodes associated with it tend to be removed), and anywhere from one lymph node (a sentinel node) to all of the axillary nodes are removed. This may be followed by radiation of the axilla.
pathways that may be used by lymphatic drainage therapists to drain the affected side, and that stimulation of the opposite side may demand activity on the affected side. With a lymphatic system overwhelmed and made out of balance, this seems a prudent approach for massage therapists to follow.  

**MASSAGE AND CLIENTS AT RISK FOR LYMPHEDEMA**

The lion's share of people with cervical, axillary or inguinal lymph nodes affected have never had an episode, but live their lives with ongoing risk of it. Given the activity precautions that so many of them are left with, how, and where, should massage therapists be careful?

From the list of precautions above, the pressure contraindication seems clear. In order to avoid damaging lymphatics, increasing circulation to the skin, or causing the brief, transient inflammation characteristic of the friction of the hands, take care with pressure and friction. Displace only the skin with your strokes, and take care not to redden it. Avoid any stretches that could cause microtrauma and the need for repair. Within these guidelines, most therapists can provide some caring, creative attention to the muscle tension in an area (See Sidebar, “I’m Less is More”).

Some focus to the issue is offered by Gayle MacDonald, author of two books on the topic, *Medicine Hands: Massage Therapy for People with Cancer* and *Massage for the Hospital Patient and Medically Frail Client.* She advises therapists not to redden the skin in the area. While the above massage precautions may be clear, the area over which to apply them is less clear. Therapists and educators in oncology massage differ over its geography on the body. Three possibilities are presented below, from smaller to larger areas of anatomy:

* **APPROACH 1.** Most therapists can agree that the at-risk limb (or, in the case of cervical nodes, the neck and head on that side) is an area for the above, gentle massage approach.

* **APPROACH 2.** Many of us also include the associated trunk quadrant, anterior and posterior, in this approach. The light areas in Figure 2 show the areas drained by the missing or injured lymph nodes. This area is described in the next section, “The Quadrant Principle.”

* **APPROACH 3.** One view would also include the limb and quadrant on the opposite side, to avoid reflexive increases in flow that would increase the load on the at-risk area.

In departure from these three approaches, an entirely different view of pressure and lymphedema risk is held by practitioners who focus on treating the at-risk tissue. In her book, *Breast Massage,* Debra Gurties describes deep, specific massage and hydrotherapy in the trunk quadrant, aimed at preventing and treating scar tissue formation. The work may be preceded by paraffin applications, and is followed by precise, skilled lymphatic drainage techniques to clear the area. Even with many of the “off-limits” elements (heat of paraffin, deep pressure and friction), this approach is promoted to reduce the risk of lymphedema. Scars and fascia are treated to free up lymph flow.

This approach, used by therapists in parts of Canada, has clinical success. But at 2,200 hours, training requirements in Ontario are much higher than that of the average U.S. therapist. This brings up the question, not just of **where** and **how** to approach the tissues, but who
should do the work. Training level and intent are important when dealing with the altered tissue anatomy of the client.

Clearly, massage contraindications for this scenario are controversial. The profession and its clients suffer confusion in the absence of consensus on the best massage approach. This mirrors the absence of consensus in the medical world, as the lymphatic system itself is poorly understood.

**THE QUADRANT PRINCIPLE FOR CLIENTS AT RISK FOR LYMPHEDEMA**

I respect all of the views expressed in the dizzying array of approaches, above, and I admire the thoughtfulness of each contributor to the discussion. Based on their reasoning and my own experience, I have landed on the second approach, and called it “The Quadrant Principle” in my own practice, teaching clinic, and writing. This shorthand helps remind therapists to include the affected trunk area in the careful, lighter pressure approach.

As seen in the lighter regions on Figure 2, the Quadrant Principle suggests care over the following areas:

* **Cervical node(s).** The neck and head on that side, down to the level of the clavicle, front and back.
* **Axillary node(s).** The limb and associated trunk quadrant, up to the level of the clavicle, down to the lowest rib level, and over to the midline, front and back.
* **Inguinal node(s).** The limb and associated trunk quadrant, up to the lowest rib level and over to the midline, front and back.

In each respective region, drained by the missing or injured lymph nodes, avoid reddening the skin and use gentle pressure and joint movement. Position so there is no focused pressure on the extremity, as there would be by hanging on the table. The Quadrant Principle includes more area than the limb or extremity (Approach 1, above), but I do not extend the precaution to the opposite side (Approach 3, above). This middle ground (Approach 2) seems a sturdy, all-purpose approach for most basic therapists. Where lymph nodes are damaged by surgery or radiation, their entire drainage area is included in Approach 2.

As for the deeper, treatment-oriented work in the quadrant described in *Breast Massage*, I would leave that to more highly trained therapists, preferably working in close collaboration with physical therapists and others on the health care team.

Although I appreciate the conservative concern about deep work on the opposite side (Approach 3), I am not convinced that the pressure, friction and joint movement contraindications extend to the opposite side. Because medical activity restrictions (blood pressure, exercise, and so on) only include the at-risk side, I confine my contraindications to the at-risk limb and any respective trunk quadrant. That said, I encourage my students to stick with medium, meaningful pressures on the opposite side, and avoid the deepest, restructuring kinds of bodywork there.

You may be concerned that the Quadrant Principle makes for a lopsided massage. It’s true that the pressures, and client experiences, are distinctly different on the two sides. But look at the “Less is More…” story in the sidebar, in which a therapist followed the precaution to the letter, with profound therapeutic results on the at-risk side. Perhaps pressure isn’t everything, even when we’re looking for a therapeutic change. There are countless stories of similar success in practice.

When presenting your massage plan—the Quadrant Principle—to a client for the first time, link your gentle approach to the common activity precautions for preventing lymphedema. Most people will recall those, and even if told by their physicians to disregard them, will respect that massage therapists need to take the same care. Without medical consensus on lymphedema prevention, massage consensus is difficult to attain, so the profession works with the best available information to avoid doing harm. Keep reading about lymphedema, watch for developments in our understanding of risk, and perhaps future massage adaptations will be more finely tuned. For now, I strongly support the Quadrant Principle in theory and in practice.
INTAKE QUESTIONS FOR SURGERY

1. How long since surgery?
   Helps you assess risk of DVT, infection, get a sense of what might be going on since surgery.

2. Any signs of infection?
   Recall the need for a referral if infection hasn't been reported to the doctor, and for gentle work if it has.

3. Any medical devices still attached and where?
   Pressure contraindications in the area of any devices; be sure to take care when positioning, draping and repositioning the client. Avoid massage techniques in the area of medical devices.

4. Where are incision sites?
   Areas could contraindicate contact if recent, or pressure if weeks after the surgery and still tender. Therapists with specialized training in scar work may follow different precautions and indications.

5. Change in bowel function?
   Gentle energy techniques, either off-body or just contact without pressure, may be indicated over abdomen. Appropriate acupressure and reflexology techniques may also be helpful to encourage bowel function. NOTE: not all clients will be comfortable answering this; you may omit this question in some situations.

6. Comfortable positions?
   Adapt accordingly. With inventive bolstering ideas, you may be able to pad around equipment, incision sites, etc., and enhance the client’s comfort.

7. Any cervical, axillary or inguinal lymph node removal? Which? Where?
   Follow area pressure, friction and joint movement restrictions as described in the Quadrant Principle.

radiation therapy

TYPES OF RADIATION THERAPY

Radiation therapy includes different types of radiation, doses and schedules with different sized radiation fields. It can involve a beam delivered to an area daily for just a few minutes over six weeks, or a beam delivered once or twice to the whole brain or to the pituitary gland. Shorter courses, with 10 to 12 treatments, may be used for palliation. For some kinds of cancers, or to prepare the body for a bone marrow transplant, full-body radiation may be delivered from an external source. External radiation does not make an individual or tissue itself radioactive. It comes from an external source then passes through the body. Although effects of this radiation remain, the radiation is gone.

On the other hand, some radiation treatments are implanted internally as small beads, wires or capsules adjacent to a tumor in order to deliver a concentrated dose to it. These implants are left in over a period of days and the individual is usually cared for in isolation in the hospital to shelter others from the radioactivity. But once the radiation has been delivered, the implants are removed and there is no danger to others.

SIDE EFFECTS OF RADIATION THERAPY

In general, the larger the radiation field or the stronger the dose, the more side effects are felt. Although each individual should be questioned about how radiation affects his or her body and massage should be adapted to these answers, some common issues should be considered by therapists. These are as follows:

- Damage to local tissue and related symptoms;
- Skin changes;
- Gastrointestinal symptoms—
  reduced appetite, nausea, vomiting or diarrhea;
- Genitourinary symptoms, including bladder frequency and urgency;
- Radiation field and markings;
- Radiation implants;
- Fatigue;
- Lymphedema.

Side effects of radiation depend upon the tissues it affects, but include skin changes such as inflammation and fibrosis. This can affect skin, but increasingly “skin sparing” techniques are being used to minimize it. Instead, deeper tissues can be affected, leading to gastrointestinal problems, genitourinary problems, fatigue and lymphedema.

CARE OF THE RADIATION FIELD

If the skin is affected by external radiation, usually on its way down to a deeper site, it can manifest as red or darkened—like a sunburn or suntan—dry, itchy, rashy, peeling and hardened (fibrotic). In the last condition, the skin is smooth and hard, suggesting scarring from the treatment. These signs and symptoms can be over small or larger areas, depending on the size of the radiation field.

Massage pressure and friction are contraindicated on affected skin to avoid aggravating it. Anything drying, such as hydrotherapy, or inflaming, like thermotherapy, also is contraindicated. Slow, gentle touch that displaces only the skin may be OK if the skin is not too irritated, and as long as the skin is intact and not open. Sometimes treated areas itch as they heal, and there is the temptation to scratch the area. A scratched area is often open, and contact is contraindicated at the site to avoid infection. In this case, quiet, still, slow hands...
simply resting on the drape over an irritated area may provide relief or distraction from the itching.

Any lubricant used in the area should be approved by the client’s radiation therapy team, and should not include any fragrance (potentially irritating), alcohols (too drying) or metals (such as zinc) that might affect the radiation beam in the next treatment. One extremely important precaution—no oil or lotion residue should be present on the skin before a radiation therapy session. It may affect how radiation is delivered during the treatment. Consider this carefully in timing the massage and use of lubricant. Radiation markings are usually tiny blue dots on the body, applied as tattoos or with a permanent marker. They may be within the radiation field and some may be outside of it, as they are used to line up equipment. You should note where the markings are and whether or not they were applied with marker—rubbing too much oil or lotion in the area can cause the marks to fade. This precaution is only relevant during radiation treatment, not afterward. To determine the extent of the radiation field, always ask the client to describe it and point to it; be sure to record their answers. Also note where the markings are and ask about any necessary position changes. For example, with a head or neck field, the face cradle may be uncomfortable. The client may need his or her head elevated during the session.

GASTROINTESTINAL SYMPTOMS
If the gastrointestinal (GI) tract is affected, then the individual may experience loss of appetite, nausea, vomiting or diarrhea. Radiation of the head and neck can produce difficulty swallowing or dry mouth. Your sensitivity to these experiences can make all the difference. Because appetite and eating are one way the body experiences pleasure, this can be experienced as a great loss. Against this backdrop, massage therapy can provide needed positive feeling.

Larger radiation fields can cause nausea, vomiting or diarrhea. If these are part of the client’s experience, specific adjustments to the massage and to the setting are suggested in the section about chemotherapy. In general, anticipating these side effects, you can work to make the client feel as comfortable as possible with proper positioning, by making water available for a dry mouth and giving them easy access to a bathroom.

GENITOURINARY SIDE EFFECTS
Increasingly, radiation is given to spare the tissue around the tumor. But if the bladder, urinary tract or genital area is affected by radiation, complications can include sexual problems, urinary discomfort, and urinary frequency or urgency. A home visit or massage setting with easy access to a bathroom is ideal for a client with urinary frequency or urgency.

RADIATION IMPLANTS
If an individual receives radiation implants, they are given clear precautions. Some are admitted as inpatients, for example, with vaginal or cervical implants. Others, such as those with prostate implants, may go home with clear instructions about contact with others. You don’t need to become an expert on radiation implants to sort out whether contact is safe; you need only follow directions given by the medical staff.

FATIGUE
Radiation therapy, whether coming from an external beam or from implants, can cause or contribute to fatigue. In some cases the fatigue is profound, especially in older individuals or those who are weakened by previous treatments like surgery or chemotherapy. Fatigue is addressed in the section on chemotherapy, where changes in the strength of massage and scheduling are suggested.

LYMPHEDEMA
Recall that lymphedema can result when lymph nodes are removed or irradiated in the cervical, axillary and inguinal areas. See the section on surgery for suggestions regarding pressure, friction and joint movement in the affected and at-risk areas.

CHEMOTHERAPY
COMPLICATIONS AND SIDE EFFECTS OF CHEMOTHERAPY
A person in chemotherapy is taking some of the strongest medicine invented. The drug is designed to destroy (or slow the growth of) the tumor, but unfortunately can strongly affect the patient’s healthy tissues, organs and well-being.

Generally, chemotherapy is delivered on a rigid schedule by intravenous infusion directly into the
blood or orally in pill form. Side effects of chemotherapy are often predictable in a certain timeframe after the drug is delivered. For example, nausea often appears a few days after chemotherapy. Still, some people never have it, while others experience it right after the infusion, or even in anticipation of treatment. Another complication of chemotherapy is a drop in blood cell populations. They are often depressed by chemotherapy in the middle of a cycle—midway between doses of the drug, at 10 days during a three-week cycle or at one week during a two-week cycle—leading to other problems described below.

Variations in people’s responses to chemotherapy can be dramatic. I have had several clients stay quite active through chemotherapy, exercising, working out with weights and continuing their work schedules. Some of these clients were on lighter regimens of chemotherapy, but some were on one of the stronger experimental protocols and still managed a high level of activity. This is less common, but it does happen. On the other hand, many people are “wiped out” by chemotherapy and struggle with low energy and malaise. These symptoms may be cumulative with each successive treatment.

As with any condition, massage is adapted to the individual client’s health, but it’s good to know some chemotherapy patterns. Principal chemotherapy issues for the massage therapist to consider are:

1. massage strength and scheduling;
2. circulatory massage intent and chemotherapy;
3. blood counts:
   * low platelets
   * low white blood cells
   * low red blood cells
4. fatigue;
5. effects on digestion and elimination:
   * mouth sores
   * nausea and vomiting
   * diarrhea
   * constipation
6. other effects of chemotherapy:
   * peripheral neuropathy
   * cognitive and mood changes
   * skin changes
   * hair loss
   * elimination of chemotherapy through the skin.

1. MASSAGE STRENGTH AND SCHEDULING

Asking clients what their chemotherapy cycles have been like can be helpful in scheduling massage appointments. Here are some examples of differences.

Right after chemotherapy, the client’s body is coping with strong medication. Massage needs to be gentle in pressure and joint movement—slow and rhythmic. It may be that stroking and kneading are too much, and that hands should stay still. Gentle, quiet energy techniques may be the best thing at this point.

Frequently, a day or a few days before chemotherapy, individuals can feel “at the top of their game” and be able to tolerate, and benefit from, slightly stronger work. Others are fine for the first few days after chemotherapy, but their symptoms appear a few days later. At the mid-point in the cycle, blood counts may be low and other symptoms can have a significant impact on the patient’s well-being.

No matter which symptoms individuals experience or when they experience them, the symptoms can worsen with each successive cycle, so clients may tolerate less stimulation as chemotherapy progresses.

Always begin massage in the conservative direction, and you will be
able to modify the massage strength with sensitivity as things change. It is in the best interests of the client to begin with conservative therapy to see how massage and chemotherapy play out in the body.

2. CIRCULATORY MASSAGE INTENT AND CHEMOTHERAPY

During chemotherapy, or in any strong drug treatment, it's wise to avoid a vigorous massage that is intended to increase general circulation in the Swedish tradition. Whether massage actually does or doesn't increase circulation is an active question, discussed in Part I of this course. We may not know the answer for some time, so for now, steer clear of massage with circulatory intent. The intent during this time should not be to move fluids or detoxify. The body is dealing with very strong medication. It's detoxifying at its own rate, and the strength of the medication is challenging for many tissues of the body.

Avoid medium and deep kneading and stroking moves intended to increase venous return, described in the massage tradition as circulatory massage. Make the stroking gentler, or use more stationary techniques. A good guideline is to consider all that a person's body must handle during chemotherapy—medications, procedures, extra effort, appointments, etc. Don't present massage as an additional stimulus to manage. Instead, provide a supportive massage.

All elements of massage—the pressure, speed, circulatory intent and so on—should be "dialed down" for people in chemotherapy.

So far this article has addressed general contraindications for people in chemotherapy. Specific contraindications for side effects or reactions to chemotherapy follow.

female breast cancer

BREAST CANCER IS THE LEADING CANCER IN AFRICAN-AMERICAN AND WHITE WOMEN IN THE U.S.
Source: www.breastcancer.org

3. LOW BLOOD COUNTS

Chemotherapy injures normal tissues as well as cancerous tissue. It may suppress activity of the bone marrow, which is called myelosuppression ("myelo-" means bone marrow). Bone marrow is in charge of manufacturing all three types of blood cells, each of which has a different function:
* platelets (thrombocytes)—are involved in blood clotting;
* white blood cells (leukocytes, including neutrophils)—fight infection; neutrophils, in particular, fight bacterial infection;
* red blood cells (erythrocytes)—deliver oxygen to the tissues.

Patients in chemotherapy undergo regular blood cell counts to see if the therapy is affecting their counts. After each chemotherapy session one or more cell populations may decline from the normal level for a period of time, hitting a low point (called a nadir) midway through the cycle, then climbing back up again in time for the next chemotherapy dose.

Patients might be checked at that low point (a nadir count) or just before the next scheduled chemotherapy in order to see whether it can proceed on schedule.

Sometimes a blood cell population is too low to proceed with the next session or can compromise the patient's health. In this case, the patient may be treated by their physician to bring it back up.

>>LOW PLATELETS

When platelet levels are low (thrombocytopenia), the patient can experience poor clotting and bruise easily. This means massage pressure must be modified. The gentleness depends on how low the platelet levels are. You may need to lighten the pressure a little or a lot.

Normal platelet levels are 150,000 to 450,000, usually called 150-450 in shorthand. Thrombocytopenia is below 100,000, or expressed as 100. At this level, pressure should be light to moderate only, the pressure many of you use to warm up the superficial muscles. In such cases the pressure should not go any deeper than this. No strong joint movement should be used, such as range of motion or stretching.

When platelets approach 50,000, you should only use pressure similar to what you use to apply and rub in lotion. Any joint movement should be soft and gentle, well within the range of the joint, and held with soft hands.

If platelets approach 20,000, your hands are just gliding over the skin, still with full, reassuring contact, but without pressure. The skin is barely displaced by the strokes with this pressure. Avoid joint movement.
INTAKE QUESTIONS FOR RADIATION TREATMENT

1. How is radiation therapy affecting you? Has it affected your skin, GI tract or bone marrow?
Modify massage to the tissues affected by radiation therapy and to any overall symptoms such as fatigue, nausea and so on.

2. How is the radiation delivered? How many? How frequently?
Finding out if radiation treatments are regular, daily and in the form of an external beam or implants will help plan a session.

3. How is the condition of your skin?
This is relevant to the massage therapist in terms of pressure, friction, lubricant and, in some cases, contact.

4. Can you point to the radiation field and markings?
Adapt massage pressure, friction, lubricant and, in some cases, contact to any skin changes in the issue. Do not disturb markings if they could be rubbed away with too much friction or lubricant. Be sure no lubricant in the treatment area following radiation therapist’s instructions if they are scheduled for radiation that day.

5. Will you want—and does your physician approve of—any touch in the area?
Many clients will not want contact on the treated areas, feeling vulnerable or uncomfortable there. The radiation oncologist and radiation therapist need to be consulted on any touch in the area if touch is desired. Following contraindications to pressure, friction, lubricant and contact is important. That said, some people appreciate still, gentle, quiet hands resting on the area through a drape.

and position the client carefully with soft bolsters. At this level and below, patients bleed easily and severely, and need transfusion of platelets to restore the population. This massage approach is conservative, but appropriate given what’s going on in the client’s tissues.

Usually strong chemotherapy, such as the high doses used in a bone marrow transplant, is the cause of the lowest levels of platelets. Some cancers themselves—such as leukemias, multiple myeloma and some kinds of lymphomas—result in reduced platelet counts. Asking a general question about blood counts like “Does your cancer or treatment affect your platelets?” will usually unearth the needed information about low platelets, regardless of the cause.

>>LOW WHITE BLOOD CELLS
This class of blood cells is divided into several groups, all helping to fight infection. Some cells are responsible for the immune response to viruses and others to bacteria. White blood cells are also called leukocytes; lowered white blood cell status is called leukopenia. However, the white blood cells of most interest are the neutrophils, which play a role in fighting bacterial and fungal infections. Their levels predict a person’s resistance to infection. Neutropenia is the term used when these are too low. People feel tired and sick when they are neutropenic. Therefore, massage should be gentle in these cases.

Treatment for neutropenia is generally offered in the form of drugs that stimulate bone marrow to produce more. After an injection is given as needed, or 24 hours after a chemotherapy treatment, patients may feel bone pain as the marrow increases its activity, pushing outward from the marrow cavity. Gentle holding of these achy areas may provide relief.

When you work with neutropenic patients, it is important to follow any neutropenic precautions taken by medical staff and clients. These measures are taken to reduce the chance of infection, and are above and beyond standard precautions used by massage therapists. Find out what kind of precautions the client’s health care team wants people to follow. Also, recall the signs of infection (fever greater than 100.5 degrees, chills, etc.). Clients who are neutropenic can get very sick from infection quickly, and should be encouraged to contact their physician when signs of infection develop.

You should always follow standard precautions for preventing transmission of infection, but in the case of neutropenic patients, these precautions are more stringent. For example, if you feel you are coming down with a cold, you should avoid contact with these patients, as such symptoms pose more danger to them than to others.

So how do you know whether to cancel a massage session? What if it’s just allergies you are experiencing? What if the scheduled clients have strong blood counts? In practice, it’s not easy to keep track of clients’ blood counts, which fluctuate day-to-day and week-to-week. Instead, a blanket approach is easier to implement: If you develop symptoms of infection, even if they could be due to allergies, contact all clients in chemotherapy and even those undergoing other cancer treatments. Offer them the chance to reschedule the session. Although stronger clients may choose to receive massage anyway, most will appreciate this gesture and take you up on the offer to reschedule.
LOW RED BLOOD CELLS

Red blood cells, or erythrocytes, are necessary for oxygen delivery to tissues. When erythrocytes are low, people feel fatigued, are intolerant of cold and experience lightheadedness and a rapid heart rate. This is one kind of anemia. Anyone with a history of anemia understands how exhausting fatigue can be when tissues are not getting enough oxygen.

Red blood cell presence is measured by a blood test called a hematocrit and by hemoglobin levels. Base your massage therapy response on the anemic client's symptoms, which are usually obvious. Fatigue requires a gentler treatment. When individuals are intolerant of cold, they obviously require a warmer treatment setting or extra drapes. Lightheadedness and rapid heart rate suggest that position changes should be slow; in fact, you are advised to have the client sit for a bit before rising from the table at the end of the session.

When chemotherapy causes anemia, medications may be used to bring up red blood counts. Like most drugs, side effects are possible with these and massage should be adapted to side effects. Some of the most common side effects include nausea, vomiting, diarrhea, body aches and constipation. The stronger a side effect, or the more side effects a patient experiences, the gentler the massage should be.

4. FATIGUE

Fatigue often accompanies chemotherapy, whether anemia is the cause or not. A fatigued person needs a less vigorous massage—gentler pressure, slower speeds, gentle joint movement and potentially a shorter session, depending on the client's energy level. If a client shows signs of fatigue—including spaceiness, a glazed expression, yawning, inability to concentrate and listlessness—modify the massage accordingly. Also be aware that a client experiencing fatigue may have specific scheduling needs and should schedule the massage at a typically good time of day for him or herself. The massage can also be scheduled at the end of the day in the client's home so he or she can sleep immediately afterward.

5. EFFECTS ON DIGESTION AND ELIMINATION

MOUTH SORES (MUCOSITIS)

Because of the effect of chemotherapy on the lining of the digestive tract, the mouth and throat may develop ulcerations or sores. These often set in a week or so after chemotherapy. They can be quite painful and affect appetite. Mucositis can feel like a mouthful of canker sores. Avoid pressure on the jaw, cheek and chin in order to avoid tugging on any sores. In addition, face cradles may press uncomfortably on the area, requiring an adjustment in position.

NAUSEA AND VOMITING

Nausea and vomiting are two of the most commonly feared side effects of chemotherapy. Fortunately, medical prevention of these side effects is much better than it used to be. Antiemetics—drugs that stop, minimize or prevent nausea and vomiting—are routinely administered with chemotherapy, in the few days after it and as often as needed after that.

Some people still experience these symptoms. You might think that people who are nauseated wouldn't seek massage therapy, but some people learn to live with a certain baseline level of nausea and continue working and keeping appointments, including massage.

Everything about the massage should be predictable for a nauseated client. Even rhythms are important, as are slow speeds and easing into each tissue. Joint movements, including range of motion, rocking and posturing, may be hard for a client to tolerate. Pressure should be gentle, but still firm and reassuring. Avoid scented lubricants in the practice unless there is a substance—such as lavender or ginger—that has a track record of easing the client's nausea.

Keep a basin or a wastebasket nearby in case the client gets sick. Always use gloves if handling it. A nearby bathroom also can be very comforting to someone who is nauseated. Someone who has been vomiting is likely to be fatigued from the effort and from lack of nourishment. Also, vomiting can cause dehydration. Generally, a hydrated client can withstand a more vigorous massage than a dehydrated one.
chemotherapy combinations

CHEMOTHERAPY IS OFTEN GIVEN, NOT JUST AS ONE DRUG, BUT IN COMBINATIONS. ONGOING CLINICAL RESEARCH HELPS ESTABLISH WHICH COMBINATIONS ARE THE MOST EFFECTIVE FOR CERTAIN TYPES OF CANCER.

Source: American Cancer Society

can. Ask clients how hydrated they are before determining the overall strength of the massage session.

>>DIARRHEA
Diarrhea and vomiting pose similar challenges. Abdominal cramping may occur, so gentle, still touch in the area may be helpful for some. Overall, predictable, gentle bodywork will be welcome. Easy access to a bathroom is necessary, and know that a client may feel fatigued and dehydrated.

>>CONSTIPATION
Chemotherapy can cause constipation. See the above reference to constipation under “surgery” for more details.

6. OTHER EFFECTS OF CHEMOTHERAPY

>>PERIPHERAL NEUROPATHY
Sometimes chemotherapy affects nerve function. Peripheral neuropathy—when peripheral nerve function is affected—can be felt as tingling, numbness, pain or burning in the hands, feet or both. An individual with pain or burning doesn’t usually want massage with pressure at the affected area, but firm, gentle contact might be okay. Some therapists report favorable effects on neuropathy from various energy-based techniques, such as reiki or healing touch.
Pressure also should be modified if sensation is impaired or absent. A client’s ability to give you feedback about pain is compromised, so it’s harder to tell how deep to go. Forgo deeper work and stick with lighter pressures that you are certain will not injure the tissues, gauging it to the patient’s tolerance. On the other hand, keep it firm, not “dribbly” or ticklish. Remember that a certain amount of pressure occurs against clients’ feet during walking. Be sure not to exceed this pressure, and keep the focus broad. If sensation is impaired or absent, always check the affected tissues for any open skin, small pebbles or other things the client might have trouble feeling. A quick check should be performed before beginning massage in the area.

>>COGNITIVE AND MOOD CHANGES
Because chemotherapy affects the nervous system, it can cause confusion, forgetfulness and difficulty concentrating. This is often called “chemo brain” and it usually fades after treatment is completed. Chemo brain is disorienting and frustrating. Cultivate compassion and use gentle reminders of appointment times, perhaps writing them on a business card.
Depression and anxiety are added realities during chemotherapy. Some medications, including chemotherapy agents, can contribute to both of these. But the experience of cancer itself can cause these mood changes.
Since it is difficult to tell which condition is causing which symptoms, the client’s concerns should be brought to their treating physician, who may adjust or prescribe medication for symptom relief.

Psychotherapy or support or advocacy groups can be helpful. The need for treatment of depression and anxiety is more readily recognized than it used to be. Health care providers are more watchful during chemotherapy and other cancer treatments, as well as in the year after treatment is complete, because individuals often struggle with anxiety and depression after finishing treatment.

>>SKIN CHANGES
The skin’s response to chemotherapy can vary from slight dryness to redness, peeling and itching. Skin rashes can occur, as can increased sensitivity to the sun.

Remain alert to these possibilities and take a good look at the client’s skin in an area before making direct contact with it. As with any skin condition, massage or touch needs to be adapted so it doesn’t aggravate it. In most cases this means no friction or pressure; in other cases, this means no contact at all, or simply resting hands on an area through a drape. If there is any chance that lesions are open, avoid all contact with the area and with any fluid coming from it.

>>HAIR LOSS
This can be the most devastating effect of chemotherapy, perhaps because it is so visible. Once a head of hair falls out—and sometimes eyebrows and eyelashes, too—cancer treatments are no longer private. Even strangers can guess what is going on; body image can be profoundly affected.

During a time of challenging body image, you can be an oasis of accep-
tance for these clients. The therapist may be the first one to see the client’s head without a hat, scarf or wig on. At the same time, this cannot be rushed, and you can be most sensitive to the issue by being willing to work in the area with the head covered or uncovered. If the client prefers to keep the head covered, work without lubricant through the covering and in the nearby area. Wigs are expensive to wash, and a scarf or baseball hat will need to be worn throughout the day.

Sometimes the scalp is irritated during the period of hair loss, or even afterward. Check with the client before using pressure. If working with a client during hair loss, you may need to separate the client’s linens and shake them out before laundering.

>>ELIMINATION OF CHEMOTHERAPY THROUGH THE SKIN

The danger of absorbing chemotherapy agents through hand-to-skin contact is not well established and is an area of controversy.

Some recommend wearing gloves for massage with clients who have received thiopeta or cyclophosphamide within the last 24 hours. Charlotte Versagi, director of the massage externship program at Beaumont Hospital in Royal Oak, Michigan, has pursued this issue further. After conversations with the hospital pharmacist, they added high-dose methotrexate to that list. Different facilities have different approaches, depending on discussions among nurses, pharmacists, physicians and massage therapists. Usually concern is limited to recent, often high-dose, infusion of certain chemotherapy reagents, which are eliminated through the skin. This concern does not extend to all chemotherapy, all of the time. You can safely massage most clients in chemotherapy, ungloved, without worry about “picking up” the medications through the skin of your hands.

OTHER CANCER TREATMENTS AND EFFECTS

This course discusses surgery, radiation therapy and chemotherapy; their common side effects and complications; and corresponding issues for the massage therapist to consider. There are other cancer treatments and medications. Bone marrow transplant (also known as stem cell transplant), biological response modifiers (“biologics” or BRMs) and hormone therapies are just a few. Some of these hold additional concerns for massage therapists, but many involve the issues already discussed here.

For example, bone marrow transplants include high-dose chemotherapy, so the side effects of chemotherapy may be relevant and compounded by the higher doses. Hormone therapies, such as tamoxifen, are sometimes prescribed over several years after cancer treatment to prevent cancer recurrence. Some have their own side effects or complications, including achiness or even a slight increase in DVT risk. Moreover, surgeries performed to reconstruct tissue have their own muscle tension and massage considerations.10,15

Becoming an expert on all cancer treatments and medication would be a daunting task for anyone, and massage therapists are no exception. How can you navigate this unknown territory of cancer treatment? You can ask the client good questions, be willing to look things up and include the physician in discussions about massage contraindications.

It is important for you to acknowledge what you do not know and take the appropriate steps to get the right information.

LESS IS MORE.
LESS IS PLENTY!

The client, J.W., was 45 when she was diagnosed with breast cancer. She had a mastectomy, removal of 33 axillary lymph nodes, radiation to the area and chemotherapy.

After the surgery, she had great difficulty raising her arm to dress, reach for shelves, and so on. It was firmly “stuck” to her side. There was little change in the following months, even though she received regular physical therapy. Her surgeon recommended massage therapy from the facility’s integrative medicine program.

The massage therapist followed the Quadrant Principle, using “energy holds” in the area and Swedish strokes at very gentle pressure, simply “lotions” the skin. She used an acupressure protocol for upper back and shoulder tension, applying it within the same pressure limits. Although her touch was gentle, it was firm, full and reassuring.

After a few weeks of regular, gentle massage to the area, the change was dramatic. The client began to gradually raise her arm overhead.

Two years later, the client has full range of motion at the joint. She remains at risk of lymphedema, but has not developed it. When she receives massage, the therapist continues working within the strict limits of the Quadrant Principle.

Although deep pressure is highly prized in massage therapy, sometimes gentler work can bring equivalent results. This story illustrates that less can be more, and that working with strict contraindications can encourage creative therapeutic approaches. In this case, simple, conservative techniques were highly effective, rewarding both the client and the therapist.
INTAKE QUESTIONS FOR CHEMOTHERAPY

1. How is your body responding to chemotherapy?
   Most people will give the needed information with this general question. You can ask, “Any effects of chemotherapy on digestion or elimination, skin, sensation, blood cells or energy level?”

2. How many cycles of chemotherapy have you been through?
   The effects of chemotherapy are cumulative; generally, the longer people are in chemotherapy, the more affected by side effects they tend to be.

3. What kind of chemotherapy schedule are you on? Are there good and bad times of each cycle that you can predict?
   Remember that people can sometimes take a slightly stronger massage (a little more pressure, longer, more vigorous) at the end of a cycle, right before the next scheduled treatment. Right after a treatment or mid-cycle are usually times for gentler massage sessions. But these patterns are individual, and it is always advisable to start with a very gentle session and only use stronger elements once a client’s response to massages over cycles has been well established.

CONCLUSION

A cancer patient in treatment is besieged with medications, scheduled procedures, test results and the needs and worries of loved ones. They can find in massage a brief, healing respite.

Information about cancer treatments is vast. No one person can know it all, but bits of information do stand out that can help you consider the best way to care for these clients. These factors are useful to a massage therapist considering the correct massage pressure, possible positions, the wisdom of moving a joint or the appropriate length of a session for a client with cancer.

Many things happen in a massage session: a connection, skilled touch, a caring exchange, a rapport established during an interview, a well-placed question and its answer that offers a small part of the client’s story. It’s also a place apart from family and work obligations where a client can heal from painful procedures. For a short while, in a small way, you can walk with someone on his or her journey through cancer treatment. As many of those in treatment would acknowledge, your company is welcome.

REFERENCES


