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## REIRRADIATION FOR HEAD AND NECK CANCER

Sharon Spencer, MD

### Introduction

Patients who develop local cancer failures in the head and neck after full course radiotherapy are candidates for surgical salvage 20% of the time with 30% surviving 5 years. The majority of patients are unresectable and are usually managed with chemotherapy. An average survival rate of 5-6 months is typically quoted using outcome data from early chemotherapy trials. The most current data suggests that more effective chemotherapy strategies will result in average survival rates of 8-10 months. In the past, reirradiation (RRT) was not considered a viable alternative for the recurrent disease population secondary to fear of normal tissue complications and doubt of a beneficial effect. Over the last 35 years there have been attempts to use various forms of RRT alone or RRT with chemotherapy with the goal of improving patient outcomes. For this discussion, the sites of the head and neck include anatomic areas of the nasopharynx, tongue, palate, gingiva, tonsils, voice box, (larynx) and pharynx.

### Reirradiation Alone

The feasibility of RRT was initially demonstrated in 1966 for patients who developed recurrent nasopharynx cancer. Dr. C.C. Wang at the Joint Center in Massachusetts noted that RRT using external beam radiotherapy (RT) and brachytherapy resulted in a surprisingly favorable outcome with few complications. Brachytherapy is a special type of RT which delivers a very intense dose of RT to a confined area with sparing of nearby normal tissues. Dr. Wang published results on fifty-one patients with recurrent nasopharynx cancer. Patients with small disease had a survival rate of 38% while

patients with large recurrences did not do as well with a survival rate of 15% noted. Dr. Wang also noted that if a patient developed their recurrence in less than 24 months after their initial RT their 5 year survival rate was 66% versus 13% for those patients who recurred at greater than 24 months after initial RT. The overall total dose of RT given was important with higher dose resulting in survival at 10 years for 1/3 of the patients. There were some complications noted. One patient developed difficulty opening the mouth while another patient developed some damage of the nerves which controls the motor function and sensation of the face and throat. Investigators at other institutions have corroborated similar results in patients with recurrent nasopharynx cancer noting up to a 60% control rate.

Brachytherapy alone and in combination with external RT was also proven early on to be a viable option for selected patients who have recurrent disease and previously irradiated in sites other than the nasopharynx. Radiation oncologists who have developed the expertise in the implementation and application of brachytherapy have reported control rates as high as 90%. Complication rates of 11-48% have been reported dependent upon the size of the recurrence. The ability to control the disease with brachytherapy is also dependent upon the size of the tumor.

The most impressive RRT data has been reported by Dr. Wang who treated 20 patients with recurrent voice box cancer. All of these patients had early disease but because of medical problems or refusal did not receive surgical removal of the voice box. The patients received full doses of RT and had 5 year local control of disease of 61%. There were no complications reported. This experience suggests that there may be a role for RRT in carefully selected early recurrent voice box cancers.

### RRT, Surgery and Chemotherapy

Successful surgical salvage in previously irradiated patients provides a 30%, 5 year survival rate. There are patients who undergo surgical resection and are noted to have unfavorable prognostic factors such as positive margins, cancer in multiple lymph nodes and disease which extends through the capsule of the lymph nodes. These factors are predictive of an increased risk of disease recurrence. Some investigators noted an improved outcome in patients who had unfavorable factors and received external beam RT after surgery. A European group reported on their experience with 25 patients who had received RT in the past, recurred, and underwent surgical resection but were noted to have unfavorable prognostic factors after pathological review of their surgical specimens. These patients received concurrent chemoradiotherapy for 5 days on alternating weeks. The RRT was given with chemotherapy called 5-fluorouracil (5FU) and Hydroxyurea (HU). A 4 year survival rate of 43% was obtained. Complications consisting of poor healing of the jawbone were noted in 16% of patients. Scarring in the soft tissues of the

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Squamous Cell Carcinoma of the Head and Neck”  
Ezra E. W.Cohen, MD

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neck was noted in 40% of the patients treated. These data support the need to explore the role of RRT in resected patients who have unfavorable prognostic features.

#### RRT and Chemotherapy in Unresectable Disease

The majority of patients with recurrent disease have large volume recurrences which are usually intimately involved with critical structures of the head and neck and are not amenable to an attempt at surgical salvage. The investigators at the University of Chicago were the first to note that previously irradiated patients treated on protocols for patients with advanced disease had better than expected outcomes. The Chicago strategy incorporated RRT with HU, 5FU, Cisplatinum and finally Taxol over several series of sequential studies. They now report a 31%, 2 year survival rate. Wheeler and Wepplemann at the University of Alabama at Birmingham reported on 20 patients who were treated with RRT and 5FU and HU using two different RT doses. At 1 year, 56% of the patients were alive. This series was updated with follow-up for 35 patients who were treated with the same chemotherapy and RRT using a higher dose of RT. The 2 year survival rate was 20%. The group at the University of Alabama treated an additional 51 patients using 5FU/HU and RRT eventually using a continuous program without treatment interruptions. The 1 and 2 year survival rates were 41% and 15% respectively. The toxicity observed consisted of soft tissue nonhealing ulcers requiring hyperbaric oxygen treatment in one patient. The other patient required a skin graft. A third patient developed severe stiffness of the jaw while a fourth patient developed a spontaneous fracture of the clavicle.

The University of Alabama's experience was tested at the RTOG (Radiation Therapy Oncology Group) which is a national clinical trials organization which develops multi-institutional protocols. The RTOG's objectives included the exploration of the RRT concepts in a multi-institutional setting in order to test the feasibility, determine the associated toxicity and to estimate the survival rate. Patients with recurrent nasopharyngeal cancer were not allowed to participate. The results from the data of 81 evaluable patients included an acceptable side effect profile with a 1 and 2 year survival rate of 41% and 16%. So far the late toxicity is acceptable with four patients experiencing normal tissue complications.

The RTOG recently completed their second RRT which was based on the experience of a trial developed at Fox Chase Cancer Center. A different chemotherapy strategy was used consisting of Cisplatinum and Taxol with RRT. Fifty-two patients were entered at Fox Chase. The 1 and 2 year survival rate was 52% and 17%, respectively. The RTOG experience using the Fox Chase concept was recently reported using the results from the first 60 patients. The study population included all sites of the head and neck except nasopharyngeal cancer. The preliminary outcome notes a 1 and 2 year survival rate of 53%, 27% respectively.

#### Discussion

The most recent RRT data is very encouraging. There are many opportunities to improve the current outcomes. There is a need to determine what patients with recurrent disease will benefit from RRT. There is also a need for new strategies design to improve the outcome for patients who respond to RRT and chemotherapy and for those

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patients who do not respond as well. The multi-institutional trials discussed included patients who had their initial RT treatments at least 6 months before the second treatment. Most of these patients reported on thus far received initial RT doses which are considered to be definitive. These patients would traditionally be considered ineligible for additional RT. Doses to the spinal cord are minimized because of its extreme sensitivity to RT. It appears that the treatment reactions noted during RT are not greater than would be expected for a patient who have never received RT. The effects seen at > 6 months are sometimes significant and consistent with nonhealing ulcers, recurrent swelling, poor healing of the jawbone, and scarring in the soft tissue of the neck.

The patterns of failure after RRT are not consistently reported in the literature but should be in that this information will be helpful when developing the next generation of clinical studies. Intensity modulated radiotherapy (IMRT) which represents the newest advance in RT technology allows the delivery of more intense doses of RT to the tumor while sparing normal tissue. If a careful analysis of recurrence patterns in RRT patients shows that the failures are within the treated area there should be an opportunity to increase doses to the gross tumor while sparing surrounding normal tissues. The next opportunity lies within the realm of rapid discovery of new drugs. This includes the traditional chemotherapy and the new classes of biologic agents which are now showing great promise in combination with RT.

#### Conclusion

There is now hope that some patients who have been irradiated in the past to the head and neck area can be safely and effectively reirradiated. The combination of chemotherapy with RRT promises to cure a subpopulation of patients with recurrent disease. Older data demonstrated the effectiveness of RRT in patients with nasopharynx cancer and other cancers of the head and neck amenable to brachytherapy. There are also perhaps groups of patients with advanced non-nasopharyngeal recurrences who can also be salvaged. The late toxicity must be evaluated carefully and strategies must be developed to reduce the potential for such effects. More effective chemotherapy

will need to be studied with RRT as RT doses and techniques are modified. Better identification of patients who will benefit most from RRT are needed. There are certain populations who may not require or benefit for RRT and should be considered for chemotherapy alone.

*Editor's Note: Sharon Spencer, MD is a Professor and Clinical Director in the Radiation Oncology Department at the University of Alabama Medical Center. Her special interests include head and neck cancer, lung cancer, brain tumors, IMRT, radiosurgery, lymphoma, gastric-intestinal, melanoma, and skin cancer.*

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## A TIME FOR SHARING A Travel Journal...Part I

Five years ago I was diagnosed with squamous cell Stage 2 cancer in my right tonsil. I kept coughing a bit, as if I had something stuck in my throat; like maybe a popcorn hull. So annoying—I stuck my finger down my throat to see if I could dislodge it; and felt a soft, solid mass there—that wasn't on the other side. So I knew, really, right away, although I fell, in the next weeks, through various stages of disbelief as if I had fallen from the top of a building and kept hitting bits of thickets and branches as I went. Finally the biopsy came back, and my doctor told me the diagnosis. I began to cry and kept saying, "I knew, I was prepared for this." He said gently, "You were prepared; but you weren't ready."

And this was true. Time would never be the same again. It would develop a strangled up-against-the-wall breathlessness, as if I could go to the front door and die, splat, there; or it would slow down to seconds and tenths of seconds while waiting for some decision or go-ahead on treatment.

The cancer team settled on radiation treatment: 35 zaps of both tonsils and under-jaw lymph glands, given my history, with a tiny hairline down the center of my chin spared, as part of sparing the central nervous system. I went to the first consultation with the radiologist fierce and ignorant. "I want my statistical average of five years survival," I demanded, "to get my 16-year-old daughter through to her 21st birthday. Her father died a month ago; this is too much. Give me the most aggressive treatment available."

The technician painstakingly built me a mesh mask to hold my head bolted down during treatments. Fittings for it required me to hold absolutely still, while many X-rays were made and checked and rechecked. A little tattoo was inserted in my skin, as a guidance point; it will always be with me. I was so glad I could do this well, I felt like if I was really good at holding still I would get a gold star, everything would work. Like kindergarten. It was excruciating to wait and wait for treatment to begin, knowing that at some day, some hour, cancer would cast off its moorings

and begin to travel through my lymph system, setting up colonies in likely spots. When they bolted down my head for the first time, I suddenly was flooded with the most unholy glee, "Take that, you slimy tumor!"

A week or two later I began to have trouble swallowing; then quickly progressed to losing 10 pounds in one week. Mind you, I had been overweight for years, so I didn't mind losing the weight; and I didn't really feel hungry, because I was already using Magic Mouthwash (that powerful swish stuff that keeps down the secondary infections like candida that set in) and oral morphine. But my doctors knew what was ahead of me, and decided to intubate me now before the throat

*People came in from up and down the street where I live, took me to chemo sessions, helped me do things. Lovely, warm people.*

deteriorated further. I was now tube-feeding, using cans of Ensure, which began to smell really awful as the radiation took its toll. Nothing tasted or smelled good except Biotene mouthwash and toothpaste. I tried to keep some natural foods going through me, blenderizing vegetables and tofu; bypassing my mouth was no problem, I could eat the healthiest stuff this way; but it did help to have foods that smelled good. Gradually my sense of smell replaced eating—I took great pleasure from the aromas of other people's pizza, or licorice, or juniper berries, and flowers. For the first time I understood the basis of aromatherapy—not those ghastly little vials of cheap chemical scents, but the direct, sensuous pleasure of fresh lilac or garlic butter. And there was even some science to it: the sense of smell goes directly to the limbic system in the brain, the oldest part of our brain, bypassing the more analytical, modern evolutionary structures. So when you smell something good, it makes you at least

momentarily happy, relaxed, in an animal way, bypassing the other, modern part of the mind that is anxious and tense. It is a good source of pleasure in days when pleasure is scarce. The scent of mint, by the way, is a natural aid against nausea and vomiting. Good to know. So is lemon zest (rind), and pine.

By now I was barely able to swallow water. I tube-hydrated myself as much as possible, and used warm tea for the few swallows I could manage. Increasingly my salivary glands were drying up, and did not return: I always carry a water bottle with me for frequent sips. At first, distilled water was much easier for me to tolerate in my damaged mouth; now tap water is fine.

At the same time, the border of the radiation damage was reaching up into my nostrils and sinuses, which responded with floods of mucus. At the end of the radiation treatment I thought I was doing pretty well, still walking a couple of miles a day (after dark, when there would be no extra ultraviolet on my skin, and when people wouldn't see my tube hanging out of my nose as much). And I had worked nearly every day, as a freelance textbook editor. Work focused me and took me out of myself, so that I relaxed. My face and neck skin looked dark and shriveled from radiation burn, but I had been careful not to wash with soap, and to coat it with fresh aloe vera gel after each treatment (it took about 10 large aloe vera plants; the commercial stuff is not nearly as effective). So at the end of treatment, my skin gradually sloughed off without leaving any raw, sore spots.

I was not prepared for what happened in the months after treatment ended. There was so little information on how I might respond to treatment; the doctors focused on the treatment and I was left to pick up what I could from inadequate websites and other sources. I had a SPOHNC friend who told me about his situation; he was so nice. And a friend's cousin showed up with the same cancer in the same place; we emailed for months and eventually years.

She was wonderful to know, someone I could ask questions of. Unfortunately, I didn't share her faith in religion, something that was a continuous problem; people would say to me that they would put me in their prayers, and I felt excluded; I would have been so grateful if they had actually helped me do laundry or given me a massage. But perhaps it is easier to pray. Many people are afraid of death, cancer, and by extension, of the person who has cancer. Some friends don't come by any more; but others, new ones, do. People came in from up and down the street where I live, took me to chemo sessions, helped me do things. Lovely, warm people.

When radiation ended, what I didn't realize is that my condition would now get worse for a while. The pain of swallowing actually got worse, and I was on oral morphine for nearly a month longer. The floods of mucus were unending; I coughed and spit and hawked constantly, frightening my daughter, who had come home from school to help out. Thank heavens my ex-sister-in-law and her family took Chey for Christmas and gave her a great time, while I could lie on my bed and cough without worrying about her. I had lost nearly 70 pounds, and was so light that I felt like I was walking funny. I could run for the first time in years, and went shopping for clothes at Goodwill, not knowing how long I would fit them. I loved being thin; definitely a benefit. It's an ill wind that blows no good. That and the sweetness of people and the ability to enjoy all kinds of small things. Like the smell of daphne odorata, and hay, and pine needles.

But it was still not possible to eat, and the things I tried to put in my mouth made me gag. Eventually I pulled my tube out, because I could swallow again, but I didn't like the food I tried. I threw away the first ice cream I tried—I could taste every bit of salt, sugar, and additives, separately. I couldn't eat meat, spit out olives, felt devastated. I finally had a breakthrough, though; I went to the beach and bought a hot dog with mild mustard. To my astonishment, the mustard was wonderful. I relished every yellow lick of it. The salt of the hot dog helped bring moisture to my dry mouth, the grease helped things slide. Who knew?! The pickle relish was way too sour. The grainy bun was impossible to eat, and

much too big to get into my damage-clenched mouth; and I had not yet mastered delivering sips of water to my mouth to make up for saliva welling up. I was still washing food down with gulps of water, which flooded my mouth, choked me with food bits, and ran out of my nose disgracefully. But I had made the first step back to recovery because the mustard was great.

Gradually I added yogurt, which helped combat the lifelong tendency I now have to get thrush, or candida albicans, in my mouth. I gradually, over years, have relinquished sweets almost entirely, for the same reason; candida thrives on sweets. But I would have gone on eating sweets, I am sure, if I hadn't gradually realized that sweets didn't taste the same way anymore. And they hurt my nose when stuff goes up my nose. It was a revelation to me how much I loved to eat, and how much

*This was my experience; completely mine; I could not share it, could not bear the dilutions and rehashings of normal human reactions.*

I waited for comfort foods to do their lifetime work—and how deeply disappointed and disoriented I was when they went away. This week was the first time in five years that I could eat Wheat Chex again; I gorged on Wheat Chex. Who would have known that Wheat Chex were part of my identity? That crunch! So wonderful after years of adapting to bananas and oatmeal and okra and ground flaxseed porridge and throat coat tea.

So it was very important to learn that something horrible was not happening when things got worse after radiation ended; that I would very slowly get better. Not fast enough for me, nor would I ever feel completely safe again. But I would enjoy life, and I would feel safe enough for long periods of time. Safe enough to travel: I went to an international women's conference in South America, to give a lecture on the necessity for protecting the rights of girls in schools.

Two years later I had yet another great checkup; "no evidence of disease." Two weeks later I had a sore throat that wouldn't go away.

The little warning bell in my head rang, and I remembered the list of cancer warning signals: "6. A sore throat that won't go away." Here we go again. Somehow I had thought I was totally safe again. Not.

So I had my first surgery; basically a really serious tonsillectomy. Came through with flying colors, and now had too little inside my throat to swallow well. I had to make sure food had an oatmeal or okra or flaxseed gravy (all things that help food particles group into a bolus, so it can be guided down the throat). And I learned to sit back in my easy chair and bring the food up to my face, to tilt my throat right. All cuisine is based on spit. A damaged mouth prefers something a bit bland or savory and gravylike, or slimy, like gelatin and yogurt. Gradually, experiment with adding bits of your favorite spicy or sweet or sour foods. For example, these all work: A can of mandarin oranges in yogurt sauce; fresh blackberry gelatin cubes in vanilla milk sauce; tomato and cheese cubes in barley or oatmeal sauce; creamed spinach and softboiled egg. Tastes really good, too, now I have trouble keeping my weight down again!

Another complication arose: My face puffed up and got angry red splotches on it one day. I was alerted to this through my lymphedema email network: Most of these people had much worse lymphedema than I did, but my face was puffy for a long time, so I leaned to gently massage the lymph fluid down, never up, 60 times a day. But lymph is protein—and when you leave it pooling in your tissues, it is like a bacterial culture medium: It gets infected easily. And that can be very dangerous, breaking down tissue yet further in already damaged areas. This infection was erysipelas—learn it, so you can convince medical personnel that you need serious antibiotics right away. Many health people haven't seen it before, so it helps to point them to the websites showing clinical photos that help make the diagnosis. Antibiotics clear up erysipelas quickly.

*Linda Purrington  
Petaluma, CA*

"A Travel Journal...Part II" continues in the Winter issue of *News From SPOHNC*.

## Plant Chemicals Provide Promise for Cancer Patients

(Adapted from *Challenge Cancer and Win!*, NutriQuest Press, 2002)

By Kim Dalzell, PhD, RD, LD

It's no secret that a poor nutritional status may diminish the quality and quantity of life for cancer patients, robbing them of the building blocks needed to regenerate healthy cells and physically recover from the sometimes debilitating effects of cancer treatment. This can be especially true for individuals who are diagnosed with and treated for oral, head and neck cancers. That's why, early on in the treatment plan, physicians, physical therapists, and nutritionists should work together with patients and caregivers to manage eating challenges brought about by conventional treatment side effects and physical or metabolic changes. Timely nutritional intervention makes it possible for many oral, head and neck patients to maintain their nutritional status through treatment. But then what?

While cancer patients must always keep in mind the end goal of obtaining adequate calories and protein, they should also consider using nutrition as a way to challenge cancer and optimize their health. Scientists have discovered that many common foods like tea, citrus fruits and soy beans, contain plant chemicals—called phytochemicals—that may boost immunity, protect healthy cells, and potentially reduce the risk of cancer metastasis or recurrence. Foods that may specifically benefit oral, head and neck cancer patients include:

### Apples

Quercetin, abundant in onions, white grapefruit and apples, is a plant compound that is classified as a citrus bioflavonoid. Bioflavonoids have anti-allergy and anti-inflammatory benefits and in human and animal studies have demonstrated antitumor activity. A study in Rome revealed that quercetin, along with the antiestrogen tamoxifen, was able to inhibit growth and division of primary laryngeal squamous cell cancer and laryngeal carcinoma cell lines. Quercetin has also been found to reduce skin

damage from radiation in patients with head and neck cancers. Applesauce and grapefruit sections can make a nutritious side dish to a main meal, or quercetin dietary supplements are available at health food stores. The recommended dose is 200 and 400 mg per day or as directed by a qualified healthcare provider.

### Cranberries

Cranberries are an excellent dietary source of proanthocyanidins, which are powerful water-soluble antioxidants that have been found to support heart health and protect against macular degeneration and cataracts. A recent University of California study found that cranberry extract blocked the growth and reproduction of two oral cancer cell lines. Grape seed extract has also demonstrated cytotoxic activity towards human breast, lung, and stomach cancer cells. Other foods rich in proanthocyanidins include blueberries, blackberries, cherries, plums, raspberries, red grapes, and strawberries. Cancer patients may want to substitute regular morning orange juice with 100% cranberry juice blends (no additional sugar added) or toss a mixture of thawed out frozen berries into a bowl with low fat, plain yogurt for an eye-appealing, between-meal-snack.

### Curry

The name “curry” is used to describe any food dish—from chicken to rice—that is made with a pureed mixture of onions, garlic, ginger, turmeric and coriander. Turmeric, which contains the plant chemical curcumin, may protect cells from chromosomal damage. There are a large number of studies demonstrating the anti-cancer benefits of curcumin. A small human study in India revealed that individuals at risk for developing cancer of the palate due to reverse smoking who took one gram of turmeric per day had fewer precancerous lesions. Additionally, researchers in California found that curcumin

could stop the growth and created apoptosis (cellular death) in head and neck squamous cancer cells. Curried foods are served at Indian restaurants and curry recipes can be found in a variety of cook books. Curcumin is also available as a natural dietary supplement. The suggested dose is 200 to 400 mg daily, or as directed by a qualified healthcare professional.

### Green Tea

Catechins are polyphenolic compounds derived from tea—green tea contains more than black tea. They have a wide range of biological activities, including the prevention of oral cancer. Human, animal and test tube studies suggest that catechins may inhibit the activation of carcinogens and have demonstrated anti-inflammatory, probiotic, and antimicrobial properties. For individuals who are not tea drinkers, good news comes from a clinical trial conducted at The State University of New Jersey. Researchers noted that subjects experienced high concentrations of catechins in their saliva by holding tea leaves or brewed tea in their mouths for 2-5 minutes and then rinsing thoroughly. Green tea is also available as a dietary supplement. A daily dose is 300 to 400 mg of standardized extract per day. For cancer patients who prefer to chew catechins, they should eat more berries, grapes, peaches, persimmons, plums and strawberries—all good sources of polyphenols.

### Soy

Diadzein and genistein are two weak plant estrogens (isoflavones) found in soybeans. They have the most active blocking potential against estrogen receptors in the breast and ovaries, but also have anti-cancer activity in several other cancer cell lines. Researchers have found that these isoflavones may enhance immunity by activating human natural killer cells. Genistein may also be effective in controlling the growth rate and metastatic properties of oral squamous cell

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carcinoma in laboratory animals. Soybeans are extremely versatile and have been made into a variety of foods. Top cereal with soy milk (chose the lite version if fat intake is a concern) or blenderize silken tofu with low-fat yogurt and fresh fruit to make a delicious smoothie. Soy dietary supplements are also available, but there may be toxicity concerns with higher intakes of purified isoflavones, so it makes sense to choose soy foods as a primary source of this cancer-fighting chemical.

Every day, research from around the world demonstrates the powerful healing potential of plants. Cancer patients should be encouraged to view foods as more than calories or protein. Rather, they should be educated and empowered with the knowledge that chemicals found in common foods may provide a substantial link to better health and cancer recovery.

*Editor's Note: Kim Dalzell, PhD, RD, LD, is an oncology nutrition expert, international nutrition consultant and award-winning author. For more information, please visit her web site at [www.challengecancer.com](http://www.challengecancer.com).*



*from* PAT'S PANTRY  
**PROVENÇAL**



Chicken Taragon

- 8 chicken thighs with skin
- 4 carrots cut in rounds
- 2 medium turnips, cut in chunks
- 2 leeks, halved and chopped
- 1 stalk celery
- 1 bouquet garni (1 bay leaf, 1/2 tsp thyme, 2 Tbs. parsley)
- 1 package fresh tarragon or 3 Tbsp. dried
- 3-4 cans canned chicken stock
- salt and pepper
- 1 Tbs. butter
- 2 Tbs. olive oil
- 1 heaping Tbsp flour
- 1/2 cup sour cream

• Place the chicken pieces, vegetables, bouquet garni, and 3 fresh branches or 2 Tbsp. of tarragon in a pot. Add chicken stock to cover. Bring to a boil, then turn down to simmer gently for 50-70 minutes until chicken is tender.

• Meanwhile, make the sauce: Melt the butter with the olive oil in a small saucepan, then add the flour and stir a few minutes. Slowly add and whisk in some of the chicken stock from the pot, until you have a creamy, somewhat runny sauce. Remove from the fire, stir in the sour cream and 1 fresh branch or 1 Tbsp. of tarragon, minced (Process in a mini food processor if you think the tarragon is too grainy for you). Remove the bones from the chicken and take out the bay leaf. Put chicken and vegetables in blender, Add chicken stock as as needed. Then top with the sauce.

*Tip: Try to get fresh tarragon. It makes a world of difference in the flavor.*

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