Managing thyroid cancer with

**Thyrogen**®

*(thyrotropin alfa for injection)*

0.9 mg/mL
You received this booklet because your doctor wants you to know about Thyrogen® (thyrotropin alfa for injection), a drug that your physician can use as part of the process to remove the remaining thyroid tissue that may be present following thyroid cancer surgery as well as obtain tests that are used to determine the recurrence of well-differentiated thyroid cancer.

Introduction
If you have been diagnosed with thyroid cancer,

Ask your doctor or nurse for a copy of our pamphlet “Understanding Thyroid Cancer.” Additional resources for thyroid cancer information are also provided at the back of this brochure and on our web site at www.thyrogen.com.

Regular communication with your doctor or health care provider about your medical condition will help make sure that you are getting appropriate care. Genzyme, the makers of Thyrogen® (thyrotropin alfa for injection), can help answer the questions you may have about Thyrogen. If you would like more information, call Genzyme Medical Information at 1-800-745-4447, option 2.

See Important Safety Information on page 20 and 21. Please see enclosed full Prescribing Information.
**THYROGEN® (thyrotropin alfa for injection),
for intramuscular injection**

**INDICATIONS**

Thyrogen® (thyrotropin alfa for injection) is used to help identify thyroid disease by testing the blood for a hormone called thyroglobulin in the follow up of patients with a certain type of thyroid cancer known as well differentiated thyroid cancer. It is used with or without a radiology test using a form of iodine.

*Limitations of Use:*

The effect of Thyrogen on long term thyroid cancer outcomes has not been determined. When Thyrogen is used to help detect thyroid cancer, there is still a chance all or parts of the cancer could be missed.

Thyrogen is also used to help patients prepare for treatment with a form of iodine to remove leftover thyroid tissue in patients who have had surgery to take out the entire thyroid gland for patients with well differentiated thyroid cancer who do not have signs of thyroid cancer which has spread to other parts of the body.

*Limitations of Use:*

In a study of people being prepared for treatment with a form of iodine after thyroid surgery, results were similar between those who received Thyrogen and those who stopped taking their thyroid hormone. Researchers do not know if results would be similar over a longer period of time.
See Important Safety Information on page 20 and 21. Please see enclosed full Prescribing Information.
Treatment

If you have been diagnosed with thyroid cancer your physician will need to consider the most appropriate treatment. For most patients, surgery is performed to remove all or part of the thyroid gland. However, surgery does not usually remove 100% of the thyroid tissue in your neck. Removal of all thyroid tissue aids follow-up and could reduce the risk of recurrence of thyroid cancer. To destroy this remaining tissue, another procedure called Radioactive Iodine (RAI) ablation may play a key role in the treatment and diagnostic evaluation in the management of thyroid cancer patients.

In order to prepare you for RAI ablation, your remaining thyroid tissue must be stimulated to aid the absorption of the RAI that you ingest, in the form of a pill or liquid. Stimulation can be achieved in two ways. The first method, withholding replacement, allows thyroid hormone levels to drop allowing thyroid-stimulating hormone (TSH) levels to increase before RAI ablation. However, this method makes you hypothyroid (see page 8).
Thyrogen® (thyrotopin alfa for injection) is the only option that allows you to stay on your thyroid hormone replacement therapy in preparation for thyroid remnant ablation.

The second option involves the use of Thyrogen® (thyrotopin alfa for injection) (recombinant human form of TSH) which can be used as part of the RAI ablation treatment process. In essence, Thyrogen allows your physician to start you on thyroid hormone replacement therapy right after your surgery, thereby avoiding the signs and symptoms of hypothyroidism. Both methods, using Thyrogen and increasing TSH by withholding thyroid hormone replacement therapy, have shown comparable success rates in thyroid remnant ablation.

See Important Safety Information on page 20 and 21. Please see enclosed full Prescribing Information.
Thyroid cancer follow-up

Follow-up visits with your doctor are essential to determine if any thyroid cancer remains or has returned—and if so, to ensure that you receive additional treatment. To test for a recurrence of thyroid cancer, your doctor will want to perform testing. In order to obtain the most reliable diagnostic test results to detect thyroid cancer recurrence, thyroid-stimulating hormone (TSH) must be at high levels in the bloodstream. This triggers thyroid cancer cells (if any remain) to make thyroglobulin (Tg), a substance that can be tested in the blood, and to better absorb radioiodine which can be seen on specialized x-rays such as a whole-body scan (WBS).

One option to increase your TSH levels is by stopping your thyroid hormone replacement therapy (thyroid hormone withdrawal) which will cause hypothyroidism (thyroid hormone replacement therapy keeps TSH levels low). Symptoms of hypothyroidism can continue after restarting thyroid hormone replacement therapy until the thyroid hormone level is back to normal. The other option for increasing TSH levels is by using Thyrogen® (thyrotropin alfa for injection). Thyrogen is the only way to raise your TSH without having to stop taking thyroid hormone replacement therapy.
What is Thyrogen® (thyrotropin alfa for injection) and what does it do?

Thyrogen® (thyrotropin alfa for injection), produced using a biotechnology process, is a protein whose properties are similar to natural human thyroid-stimulating hormone (TSH). Thyrogen is given by intramuscular injection prior to RAI ablation or diagnostic testing in patients with well-differentiated thyroid cancer.

Thyrogen helps you to avoid hypothyroidism while still allowing your physician to treat the thyroid remnant and can also help obtain reliable diagnostic test results for the recurrence of thyroid cancer.

With Thyrogen® (thyrotropin alfa for injection), you can keep taking your thyroid hormone replacement therapy while being tested for thyroid cancer recurrence.
When might my doctor recommend Thyrogen® (thyrotropin alfa for injection)?

• Thyrogen permits your doctor to put you on thyroid hormone replacement therapy right after surgery and prior to RAI ablation.

• Thyrogen treatment may be used in combination with radioiodine to treat thyroid remnants following near-total or total thyroidectomy in patients without evidence of distant metastatic disease (outside the neck).

• If a previous Tg blood test was negative while you were taking thyroid hormone replacement therapy, your doctor may want to confirm this result with a stimulated Tg blood test in combination with Thyrogen.

• Sometimes the pituitary gland is unable to produce enough TSH naturally to make thyroid cells absorb radioactive iodine (to be seen on a scan) or to make enough thyroglobulin (to be measured by the Tg test). In this case, Thyrogen may help.

• Thyroid hormone withdrawal may not be appropriate for patients with certain medical conditions, such as advanced cardiac disease.
Are there any reasons why my doctor might not use Thyrogen® (thyrotropin alfa for injection)?

You should discuss your options with your doctor and decide if your medical situation and life/family circumstances make Thyrogen right for you.

Are there any side effects with Thyrogen?

The most common adverse reactions reported in clinical trials were nausea and headache. Even with a Thyrogen-stimulated Tg test and WBS, a risk remains of missing a diagnosis of thyroid cancer or of underestimating the extent of disease. Please read the enclosed full product information which provides complete details about Thyrogen’s proper use and possible side effects (see ADVERSE REACTIONS). If you have any questions or concerns, you should talk with your doctor before receiving Thyrogen.

Thyrogen® (thyrotropin alfa for injection) may be considered by your doctor if you are unwilling to stop taking your thyroid hormone replacement therapy prior to RAI ablation or diagnostic follow up.

See Important Safety Information on page 20 and 21. Please see enclosed full Prescribing Information.
What is hypothyroidism?

Hypothyroidism occurs when a person’s thyroid gland has been removed or is underactive and not producing enough thyroid hormone. Hypothyroidism affects millions of people in the United States. Some people may experience only minor symptoms, but some may experience more severe symptoms.

Symptoms of hypothyroidism may include the following:

- worsening of cardiovascular conditions
- difficulty walking
- difficulty driving vehicles and operating machinery
- fatigue
- forgetfulness
- difficulty concentrating
- depression
- dry skin and hair
- puffy face and eyes
- low tolerance to the cold
- weight gain
- constipation
- irregular menstrual periods
I’ve had thyroglobulin (Tg) testing before while still taking my thyroid hormone replacement therapy. My doctor is suggesting that I take Thyrogen® (thyrotropin alfa for injection) in conjunction with my thyroid hormone replacement therapy this time around for Tg testing.

why?

Stimulated Tg blood testing is more reliable at detecting thyroid cancer recurrence when thyroid-stimulating hormone (TSH) levels are elevated. Thyrogen® (thyrotropin alfa for injection) increases TSH levels while still allowing you to continue taking thyroid hormone replacement therapy or thyroid hormone withdrawal.
If you are receiving Thyrogen® (thyrotropin alfa for injection) for ablation, the following schedule may be used:

**RAI Ablation Schedule**

<table>
<thead>
<tr>
<th>DAY 1</th>
<th>DAY 2</th>
<th>DAY 3</th>
<th>A post-ablation scan should be performed 3 to 5 days after the administration of radioiodine</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Thyrogen injection</td>
<td>Second Thyrogen injection</td>
<td>Radioactive iodine dose</td>
<td></td>
</tr>
</tbody>
</table>

If you are receiving Thyrogen for monitoring recurrences, the following schedule may be used:

**Diagnostic Testing Schedule**

<table>
<thead>
<tr>
<th>DAY 1</th>
<th>DAY 2</th>
<th>DAY 3</th>
<th>DAY 4</th>
<th>DAY 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Thyrogen injection</td>
<td>Second Thyrogen injection</td>
<td>Radioactive iodine dose*</td>
<td></td>
<td>Serum thyroglobulin with or without whole-body scan</td>
</tr>
</tbody>
</table>

*if whole-body scan is scheduled

Be sure that you understand and plan your schedule according to your doctor’s instructions. Thyrogen is available by prescription only.

See Important Safety Information on page 20 and 21.
Please see enclosed full Prescribing Information.
Is Thyrogen® (thyrotropin alfa for injection) covered by insurance?

Thyrogen® (thyrotropin alfa for injection) is covered by many private insurance plans, as well as government plans, including Medicare and Medicaid. You and your doctor should understand your insurance coverage before Thyrogen use is initiated so that problems obtaining reimbursement can be minimized.

• ThyrogenONE® is a reimbursement support program that is available to help you and your doctor to determine what type of insurance coverage you have and then work with your doctor so you can receive treatment with Thyrogen.

• Your insurance company may require that you receive Thyrogen from a specialty pharmacy. Your doctor may submit your Thyrogen prescription to either ThyrogenONE®, who will coordinate with the appropriate specialty pharmacy, or directly to the specialty pharmacy that your insurance company works with to have your insurance coverage checked. Once your insurance coverage is verified, the specialty pharmacy may contact you directly by phone to collect any applicable deductible, co-pay and/or co-insurance for Thyrogen required by your individual insurance plan. The specialty pharmacy will work with your doctor to schedule the shipment of Thyrogen to your doctor’s office.

• Your doctor may choose to have you receive your Thyrogen treatment at a local hospital or outpatient facility instead of at your doctor’s office.
See Important Safety Information on page 20 and 21.
Please see enclosed full Prescribing Information.
What is ThyrogenONE®?

ThyrogenONE®
Providing Assistance with Reimbursement for Thyrogen

- Help with understanding insurance coverage for Thyrogen
- Help with financial assistance programs for those who qualify

1-88-THYROGEN (1-888-497-6436)
Monday - Friday from 8:00 am to 8:00 pm EST

If your doctor orders Thyrogen through a specialty pharmacy, the pharmacy will call you to confirm insurance coverage and any out-of-pocket costs.

It is very important for you to return this call as soon as possible to ensure Thyrogen is delivered to your doctor’s office in time for your treatment or test.
ThyrogenONE® is committed to helping ensure access to Thyrogen® (thyrotropin alfa for injection) for all eligible patients, including uninsured and underinsured patients.

For further information, please contact ThyrogenONE at 1.88.THYROGEN (1.888.497.6436)
Where can I find more information?

<table>
<thead>
<tr>
<th>Organization</th>
<th>Address</th>
<th>Phone</th>
<th>E-mail</th>
<th>Web site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genzyme Corporation</td>
<td>500 Kendall Street</td>
<td>1-800-745-4447</td>
<td></td>
<td><a href="http://www.genzyme.com">www.genzyme.com</a></td>
</tr>
<tr>
<td></td>
<td>Cambridge, MA 02142</td>
<td></td>
<td></td>
<td><a href="http://www.thyrogen.com">www.thyrogen.com</a></td>
</tr>
<tr>
<td>ThyCa: Thyroid Cancer Survivors’ Association</td>
<td>P.O. Box 1545</td>
<td>1-877-588-7904</td>
<td><a href="mailto:thyca@thyca.org">thyca@thyca.org</a></td>
<td><a href="http://www.thyca.org">www.thyca.org</a></td>
</tr>
<tr>
<td></td>
<td>New York, NY 10159-1545</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light of Life Foundation</td>
<td>P.O. Box 163</td>
<td>1-877-565-6325</td>
<td><a href="mailto:info@checkyourneck.com">info@checkyourneck.com</a></td>
<td><a href="http://www.checkyourneck.com">www.checkyourneck.com</a></td>
</tr>
<tr>
<td></td>
<td>Manalapan, NJ 07726</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Thyroid Association</td>
<td>6066 Leesburg Pike, Suite 550</td>
<td>703-998-8890</td>
<td><a href="mailto:thyroid@thyroid.org">thyroid@thyroid.org</a></td>
<td><a href="http://www.thyroid.org">www.thyroid.org</a></td>
</tr>
<tr>
<td></td>
<td>Falls Church, VA 22041</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Genzyme Corporation does not review or control the content of non-Genzyme literature or web sites. These listings do not constitute an endorsement by Genzyme of information provided by any other organization.
See Important Safety Information on page 20 and 21. Please see enclosed full Prescribing Information.
IMPORTANT SAFETY INFORMATION

There have been reports of events that led to death in patients who not had surgery to have their thyroid gland removed, and in patients with thyroid cancer cells that have spread to other parts of the body.

Patients over 65 years old with large amounts of leftover thyroid tissue after surgery, or with a history of heart disease, should discuss with their physicians the risks and benefits of Thyrogen.

Thyrogen can be administered in the hospital for patients at risk for complications from Thyrogen administration.

Since Thyrogen was first approved for use, there have been reports of central nervous system problems such as stroke in young women who have a higher chance of having a stroke, and weakness on one side of the body.

Patients should remain hydrated prior to treatment with Thyrogen.

Leftover thyroid tissue after surgery and cancer cells that have spread to other parts of the body can quickly grow and become painful after Thyrogen administration.

Patients with cancer cells near their windpipe, in their central nervous system, or in their lungs may need treatment with a glucocorticoid (a medication to help prevent an increase in the size of the cancer cells before using Thyrogen.)
ADVERSE REACTIONS

In clinical studies, the most common side effects reported were nausea and headache.

USE IN SPECIFIC PATIENT POPULATIONS

Pregnant patients: Thyrogen should be given to a pregnant woman only if the doctor thinks there is a clear need for it.

Breastfeeding patients: It is not known whether Thyrogen can appear in human milk. Breastfeeding women should discuss the benefits and risks of Thyrogen with their physician.

Children: Safety and effectiveness in young patients (under the age of 18) have not been established.

Elderly: Studies do not show a difference in the safety and effectiveness of Thyrogen between adult patients less than 65 years and those over 65 years of age.

Patients with kidney disease: Thyrogen exits the body much slower in dialysis patients and can lead to longer high TSH levels.

See full Prescribing Information for more details.
Schedules for Thyrogen® (thyrotropin alfa for injection)  
Ablation & Diagnostic Testing

**Thyrogen RAI Ablation Schedule**

**Your Thyrogen ablation checklist and schedule  
(to be filled out by your doctor or nurse)**

Follow a low-iodine diet before ablation therapy

Start low-iodine diet on ____________________________  
End low-iodine diet on ____________________________

<table>
<thead>
<tr>
<th>WHEN</th>
<th>WHAT</th>
<th>WHERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>Date/Time</td>
<td>Schedule</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Thyrogen 0.9 mg IM injection #1</td>
</tr>
</tbody>
</table>
| 2    |      | Thyrogen 0.9 mg IM injection #2  
This injection should follow **24 hours**  
after the 1st injection |       |
| 3    |      | Radioactive iodine administered orally  
Radioiodine should follow **24 hours**  
after the 2nd injection |       |
| 4    |      |           |       |
| 5    |      |           |       |
| 6, 7,  or 8+ | | Post-therapy whole-body scan  
(Your physician may decide that  
post-therapy scanning may be delayed  
additional days) |       |

**OTHER INSTRUCTIONS**

Please remember to take your thyroid hormone replacement therapy (levothyroxine sodium) as directed prior to and during this time period.

You will receive two Thyrogen injections. The dates, times and location for your appointments are listed on the schedule below.
Your Thyrogen testing checklist and schedule
(to be filled out by your doctor or nurse)

☐ You are having only a stimulated thyroglobulin (Tg) blood test with Thyrogen
☐ You are having both a stimulated thyroglobulin (Tg) blood test and a whole-body scan (WBS) with Thyrogen
☐ Follow a low-iodine diet before the whole body scan
  Start low-iodine diet on ________________________  End low-iodine diet on ______________________
☐ You will receive two Thyrogen injections. The dates, times and location for your appointments are listed on the schedule below.

<table>
<thead>
<tr>
<th>WHEN</th>
<th>WHAT</th>
<th>WHERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>Date/Time</td>
<td>Schedule</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Thyrogen 0.9 mg IM injection #1</td>
</tr>
</tbody>
</table>
| 2     |            | Thyrogen 0.9 mg IM injection #2  
This injection should follow **24 hours** after the 1st injection | |
| 3     | ☐ Radioactive iodine administered orally. Radioiodine should follow **24 hours** after the 2nd injection* | | |
| 4     |            | |
| 5     | ☐ Whole-body scan
☐ Thyroglobulin (Tg) blood test | |

*Other instructions

*if whole-body scan is scheduled
See Important Safety Information on page 20 and 21.
Please see enclosed full Prescribing Information.