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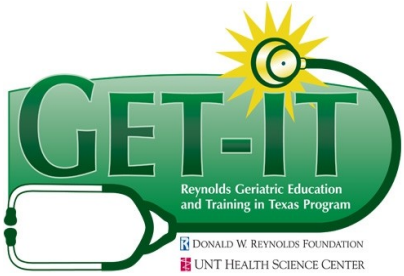
# ELDER CARE

## A Resource for Providers




## Hypothyroidism in the Very Old

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Although the US Preventive Services Task Force concluded in 2004 that there is insufficient evidence to support a recommendation for or against routine screening of adults for hypothyroidism, a variety of professional organizations have, at one time or another, endorsed such screening. The widespread availability of thyroid stimulating hormone (TSH) assays has made it easy to test for hypothyroidism. Because of concern that they may overlook the subtle symptoms of hypothyroidism in older adults, clinicians commonly order TSH screening tests to check for hypothyroidism in these patients.

High TSH levels (indicating overt or subclinical hypothyroidism) are found in up to 20% of older adults. Clinicians must decide whether these individuals need thyroid replacement therapy.

Determining whether or not to treat individuals for hypothyroidism can be difficult in the population of the oldest old (those over 80 years of age) because the evidence base is limited and conflicting. The decision may also differ depending on whether the patient has subclinical hypothyroidism (elevated TSH and normal levels of thyroid hormone) or overt hypothyroidism (elevated TSH and low levels of thyroid hormone).

### Hypothyroidism and Heart Disease

Most clinicians are aware that overt hypothyroidism (OH) is associated with cognitive dysfunction, fatigue, constipation, weight gain, and a variety of other findings (Table 1). Similar symptoms may also be present to a lesser degree in individuals with subclinical hypothyroidism (SH), while others with SH have no symptoms at all.

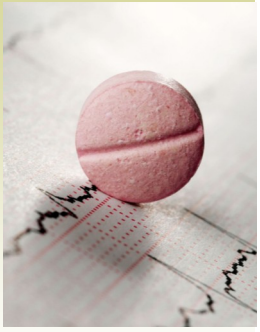
**Table 1. Common Signs and Symptoms of Hypothyroidism**

| | |
|---|---|
| • General | fatigue, lethargy, hoarse voice |
| • Metabolic | hyperlipidemia, weight gain, intolerance to cold |
| • Cardiovascular | bradycardia, hypertension |
| • Neurologic | depression, cognitive slowing |
| • Gastrointesinal | constipation |
| • Dermatologic | dry skin, non-pitting peripheral edema |

In all of these situations – OH, SH with symptoms, and SH without symptoms – treatment decisions for very old individuals are complicated by the fact that people with hypothyroidism have an increased risk of coronary heart disease (CHD). The risk is seen in both OH and SH, and it occurs over and above the age-related increase in CHD. The reason for the increased risk of CHD in hypothyroidism is unclear, but may be related to the hypertension and dyslipidemia that accompany hypothyroidism.

### *TIPS ON TREATING HYPOTHYROIDISM IN VERY OLD ADULTS*

- In the absence of symptoms, avoid treating subclinical hypothyroidism in people over 80, at least until the TSH is >10 mU/L..
- When treating overt hypothyroidism or symptomatic subclinical hypothyroidism, start thyroxine therapy at a low dose (12.5-25mcg/day) and increase by 12.5-25 mcg increments every 4-6 weeks. Seek a goal TSH level slightly above the normal range to minimize the cardiostimulatory effects of thyroid hormone.
- Avoid overtreatment (suppression of TSH to below normal) as supratherapeutic hormone levels lead to osteoporosis, atrial fibrillation, and exacerbations of coronary artery disease.



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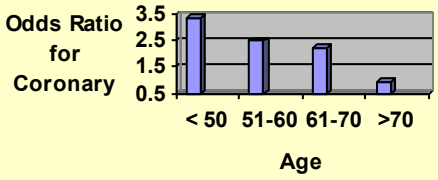
**Subclinical Hypothyroidism** Numerous studies have shown an increased risk of symptomatic CHD in patients with SH. But, the risk declines with age (Figure 1). For individuals with SH who are younger than 50, the risk of symptomatic CHD is more than triple the risk in people with normal thyroid function. In people over 70, however, there is no increased risk. And in those over 85, the risk of symptomatic CHD among individuals with SH is actually lower than in age-matched controls.

Thus, there may be a "protective" effect of SH in very old individuals. A relatively hypothyroid state decreases myocardial oxygen demand in patients with underlying CHD, thereby lowering the risk of cardiac symptoms and death. For this reason, in the absence of hypothyroid-related symptoms that call for treatment, many experts recommend not treating asymptomatic SH in elders > 80 years.

**Figure 1 : Risk of Coronary Heart Disease Associated with Hypothyroidism**




**Symptomatic Hypothyroidism** Treatment of symptomatic SH or OH in very old adults has more consensus agreement, but requires a different approach than in younger patients. In older adults, most experts agree that the benefits of thyroid replacement outweigh the risks of treatment when the serum TSH is > 10 mU/L. With TSH levels between 4.5 – 10 mU/L, expert opinion varies greatly, and the clinician must make their own best clinical judgment for the individual patient. In all cases, however, due to the high rate of symptomatic or occult CHD in very old individuals, and the even higher rate in those with hypothyroidism, thyroid replacement should be started at low doses and increased slowly (Table 2) to avoid exacerbating cardiac disease.

While in younger individuals the goal of treatment is to restore a euthyroid state by lowering TSH levels into the normal range, in older individuals it may be preferable to maintain the TSH level slightly above normal. This approach takes advantage of the cardioprotective effect of mild hypothyroidism discussed earlier, reducing chances that thyroid replacement will aggravate CHD.

**Table 2. Recommended Dose of L-Thyroxine for Very Old Individuals or People with Known Coronary Heart Disease**

- Starting Dose: 12.5-25 mcg/d
- Dose Increment: Increase by 12/5-25 mcg/d at 4-6 week intervals

**Overtreatment**

It is important to avoid overtreatment (i.e. replacement doses of thyroid hormone that causes TSH to fall below the normal range). Research shows that such overtreatment occurs in as many as 30% of patients taking thyroid replacement therapy. In addition to exacerbating CHD, overtreatment can lead to osteoporosis, atrial fibrillation and a significant increase in mortality rates.

**Summary**

At present, the evidence base is not sufficient to allow a consensus guideline for routine screening of asymptomatic older adults for hypothyroidism, although most experts do agree that "aggressive case-finding" is appropriate when evaluating older patients. Similarly, expert panels differ in their guidelines for treatment of documented subclinical or mild hypothyroidism, particularly for those with TSH between 4.5-10 mU/L. For subclinical disease, the clinician is left to his own best judgment on the risks and benefits of treatment, with the presence of symptoms often helping to guide the decision. In general, most experts agree that the benefits of treatment outweigh the risks for TSH >10 mU/L. For the oldest old, starting with the lowest dosing (12.5-25 micrograms/day) is recommended.

## References and Resources

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