Primary hypothyroidism

TRH, a prolactin releasing factor (PRF), will be elevated

● chronic primary hypothyroidism may produce secondary pituitary hyperplasia (pituitary pseudotumor) indistinguishable from adenoma on CT or MRI. Must be considered in any patient with a pituitary mass

● pathophysiology: loss of negative feedback from thyroid hormones causes increased TRH release from the hypothalamus producing secondary hyperplasia of thyrotrophic cells in the adenohypophysis (thyrotroph hyperplasia). The patient may present due to pituitary enlargement (visual symptoms, elevated PRLfrom stalk effect, enlarged sella turcica on x- rays...)

● chronic stimulation from elevated TRH may rarely produce thyrotroph adenomas

● labs: T4 low or normal, TSH elevated (>90–100 in patients presenting with thyrotroph hyperplasia), prolonged and elevated TSH response to TRH stimulation test (see text)