

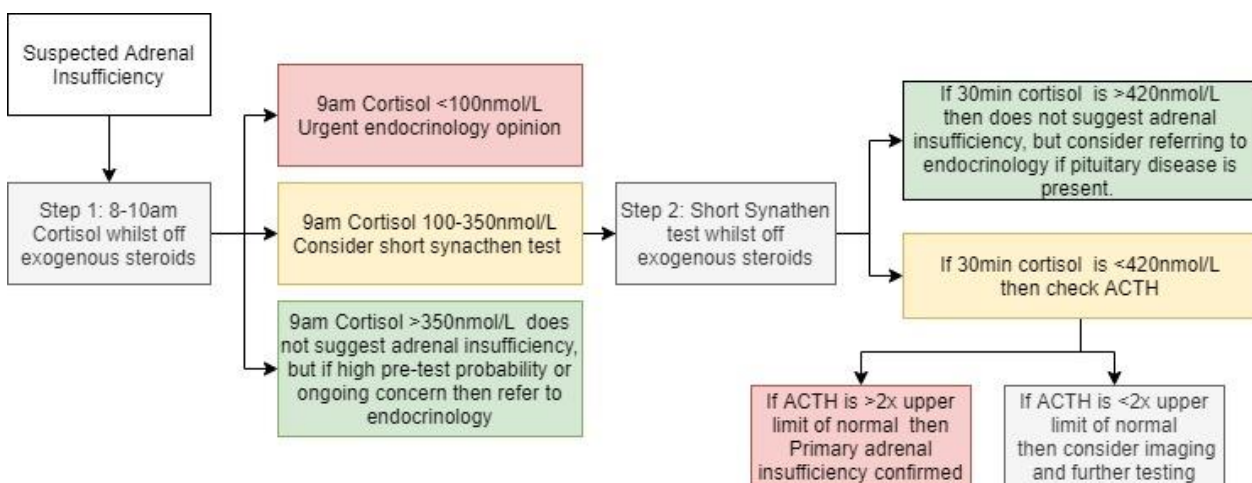
## Adrenal Insufficiency - Short Synacthen Test in Adults – Summary Clinical Guideline

Reference no.: CHISCG1

### 1. Guideline

#### INDICATIONS

The short Synacthen test is a simple procedure for investigating reduced adreno-cortical function and adrenocortical reserve. It is in itself a preliminary test and abnormal responses need to be followed-up with an endocrinology opinion being sought. It is advised that patients should be screened for adrenal insufficiency with a 9 a.m. cortisol before considering a short synacthen test.



N.B. The use of a 9 a.m. cortisol with the cut off values in this diagram is only appropriate for use in Outpatients or Inpatients that are not critically unwell. In all other situations Endocrine advice should be sought if there is concern about adrenal insufficiency.

It should be noted that prednisolone and hydrocortisone cross react with cortisol assays (i.e. can give falsely raised cortisol levels), but dexamethasone and budesonide do not. The short synacthen test is only suitable for patients that have been off exogenous steroids for an appropriate length of time – see the section on ‘patient preparation’ for more information. The contraceptive pill or other hormone replacement therapy can also affect results within 6 weeks, so a clinician should discuss with the patient about stopping temporarily or consult Endocrinology about whether proceeding with the test is appropriate.

#### CONTRAINDICATIONS

- Pregnancy
- Previous hypersensitivity to ACTH, Synacthen or Synacthen depot
- The first six weeks following pituitary surgery

#### SIDE EFFECTS

Local or systemic hypersensitivity reactions have been reported very rarely following Synacthen injection, particularly if a history of allergic disorders.

#### PRECAUTIONS

Patient should be kept under observation throughout the period of this test.

## PREPARATION

### Planning

The test can be carried out as an outpatient at any time, but **should ideally be performed as near to 9am as possible**. Cortisol levels decline throughout the day and cortisol responses between the morning and late afternoon may differ by as much as 100 nmol/L at 30 minutes post Synacthen, making interpretation of afternoon tests difficult if the response is abnormal. An adequate response to synacthen is a valid result at any time of day.

### Patient

- Fasting is not necessary
- Patients on exogenous steroids should withhold their steroid for the following times, but take them immediately after completing the synacthen test:
  - Hydrocortisone - withhold for 18hrs before the test
  - Prednisolone - withhold for 24hrs before the test
  - Topical steroids and inhaled steroids - withhold for 48hr prior to the test
  - Steroid joint injections - withhold for 8 weeks prior to the test
- Patients on dexamethasone or budesonide should be discussed with the endocrine team before testing
- All medication should be noted on the request form

### Equipment

Obtain the Synacthen from a Pharmacy or Chemist (1 mL ampule, containing 250 micrograms). You will also require 2 SST (yellow top) vacutainer tubes and an EDTA (purple top) tube.

## PROCEDURE

The short synacthen test procedure is shown below.

Samples must be clearly labelled with patient name, date and time, e.g. 09:30

- A basal (0 min) ACTH sample (4 ml EDTA purple top tube) should always be collected, but the laboratory will only process this if the 30min cortisol is <420nmol/L
- Samples for ACTH must not be taken after administering Synacthen

Time (mins)	Test	Tube type
Basal sample	<ul style="list-style-type: none"> <li>• Cortisol</li> <li>• ACTH (<i>Always send but will not be processed if SST is normal</i>)</li> </ul>	SST (yellow top) EDTA (purple top)
0 min	Inject 250 micrograms of Synacthen i.m. or i.v.	
30 min	<ul style="list-style-type: none"> <li>• Cortisol</li> </ul>	SST (yellow top)

Send both cortisol samples and ACTH sample with a completed Chemical Pathology request form to the Chemical Pathology Department as soon as the test is finished.

## INTERPRETATION

A normal response is defined as 30 minute serum cortisol concentration greater than 420 nmol/L. See the full guideline for more information regarding the interpretation of results.