# Tayside TB Referral Pathway: Initial Diagnosis

Any of the following:

- New Diagnosis
- Likely Diagnosis
- Planned Treatment Start

Any patients not under care of ID/Resp will be allocated a responsible team on referral

Details required

- Patient name and CHI
- Location
- Responsible Consultant
- Weight
- Any renal or liver impairment
- Planned drug regimen and duration

Email details to ID email inbox
tay.id@nhs.scot and
d.connell@nhs.scot
Details will be sent to following teams:

**Microbiology Team:**
To be made aware about likely diagnosis
Infection Control: to be made aware of any inpatients

**Health Protection Team:**
Where contact tracing will be initiated.
If DOT agreed, please refer to public health document

**Responsible clinician will be asked to print and sign the standard prescription script***

*see separate initiation script and standard continuation script

**Patient will be added to next TB MDT:**
consider any risks for Enhanced Case Management & Directly Observed Therapy (DOTs)

**Antimicrobial Pharmacists:**
Interaction/dosing advice if required, add to patient list, facilitate prescription depending on dispensing site

Initial qnvestigations required in all cases:

- Bloods (FBC, liver function tests, U&Es, HIV, Hep B, Hep C)
- Perform eye screening and record this on the dictation template

NOTE: TB Framework for Scotland Key Performance Indicator: diagnosis to treatment within 7 days

# Tayside TB Pathway: prescribing information for standard TB prescribing regimes

**Please note: this is for reference only and TB prescribing and monitoring is usually performed by specialist services (Infectious Diseases, Respiratory and Antimicrobial Pharmacy teams) but can be prescribed in Primary Care under direction of specialist**

If concern regarding a possible TB case, please discuss with ID/Respiratory team

**Standard pulmonary TB drug regime**: duration 6 months in total
(2 months 'Initiation Phase' followed by 4 months 'Continuation Phase')
**For active TB of the central nervous system**: duration 12 months in total
(2 months 'Initiation Phase' followed by 10 months 'Continuation Phase')

For people with active TB of the lymph nodes, do not routinely extend treatment beyond 6 months for newly enlarged lymph nodes of sinus formation, or for residual enlargement of the lymph nodes or sinuses[1]

(1): NICE guideline [NG33] Tuberculosis. Published date: January 2016. Last updated: May 2016

## Initiation Phase 2 months

**Modify the treatment regimen according to drug susceptibility testing**

1. **Rifampicin**
2. **Isoniazid**
3. **Pyrazinamide**
4. **Ethambutol**

**Combined as Rifater + Ethambutol or Voractiv (see below)**

**+ Pyridoxine given with any isoniazid containing regimens**

**STANDARD DAILY DOSES RIFATER:**
**< 40 kg 3 tabs**
**40-49 kg 4 tabs**
**50-64 kg 5 tabs**
**> 65 kg 6 tabs**

**+ Ethambutol: 15mg/kg rounded to nearest 100mg**
**+ Pyridoxine 10mg daily**

**STANDARD DAILY DOSES VORACTIV:**
**30-39 kg 3 tabs**
**40-54 kg 4 tabs**
**55-70 kg 5 tabs**
**> 70 kg 6 tabs**

**+ Pyridoxine 10mg daily**
**Voractiv can be used in NHST if shortages of Rifater/communication or possibl e adherence issues where simplifed regimen beneficial and agreed by MDT**

**IF COMBINATION PRODUCTS NOT SUITABLE:**
**Rifampicin <50kg 450mg daily, > 50kg 600mg daily**
**+ Isoniazid 300mg daily**
**+ Pyrazinamide <50kg 1.5g daily, >50kg 2g daily**
**+ Pyridoxine 10mg daily**
**+ Ethambutol 15mg/kg rounded to nearest 100mg**

## Continuation Phase 4 months

**Modify the treatment regimen according to drug susceptibility testing.**
**May require longer duration of treatment depending on site of infection.**

1. **Rifampicin**
2. **Isoniazid**

**Combined as Rifinah (see below)**

**+ Pyridoxine given with any isoniazid containing regimens**

**STANDARD DAILY DOSES RIFINAH:**
**≥50kg = RIFINAH 300 X 2 TABLETS DAILY**
**<50kg = RIFINAH 150 X 3 TABLETS DAILY**

***Rifinah - to accommodate pack size it is acceptable for each month supply requested to dispense one original pack (28 day supply)**
**+ Pyridoxine 10mg daily**

**IF COMBINATION PRODUCT NOT SUITABLE:**
**Rifampicin <50kg 450mg daily, > 50kg 600mg daily**
**+ Isoniazid 300mg daily**
**+ Pyridoxine 10mg daily**

# THINK INTERACTIONS!

**Please consider drug interactions with anti-tuberculosis medication. There are many interactions with common medications and caution should be taken when starting a patient on anti tuberculosis medication or adding/changing medication when a patient is currently on anti-tuberculosis treatment.**

**For patients of child bearing potential, check method of contraception – depot medroxyprogesterone acetate (DPMA) and intra-uterine devices (Cu-IUD/LNG-IUS) are not affected by rifampicin. All other hormonal methods of contraception and emergency contraception are affected (including implants) so barrier contraception should be recommended while on rifampicin and for 4 weeks after stopping.**

Drug interactions can be checked through:

BNF:
https://bnf.nice.org.uk/interaction/

or Stockley's Interaction Checker:
https://www.medicinescomplete.com/#/interactions/stockley

Another helpful resource is TB Drug Monographs:
http://www.tbdrugmonographs.co.uk/

Antimicrobial Pharmacist email:
Tay.antibioticpharm@nhs.scot

# Tayside TB Pathway: Monitoring

**Monitoring Considerations:**

- **All patients LFTs at 2 weeks**
- **Monitor liver function tests closely if:**
  - **abnormal LFTs**
  - **alcohol or drug misuse**
- **Therapeutic Drug Monitoring (TDM) if concerns re absorption/interactions - d/w pharmacist**

**Key checks at 2 months:**

- **Check LFTs at this time**
- **Are they clinically better?**
- **Are they smear negative? Sensitivities from reference lab?**
- **Continuation prescriptions should be prepared in advance if possible, or at follow up appointment (see below for standard continuation script)**

## Communication with Primary Care and updating clinical records:

**Please use Opcomms ('communication to GP form' on clinical portal) when seeing patients and starting/changing medications.**
**This will be used to update patient's information and GPs/other clinicians and teams.**
**When using Opcomms please specify what medications have been dispensed/changed and ask that the patients ECS be updated (with stop dates). Please be careful with wording, ensure it is clear if the prescription has been supplied via hospital pharmacy.**

**When dictating clinical letters for patients diagnosed with TB, please use the example template below, in order to provide more cohesive information for GPs/other clinicians and teams:**

Diagnosis :
Estimated treatment duration:

Weight:
Site:
Smear:
Culture:
Sensitivities:
BBV:

TB Treatment

| Standard recommended regimen (weight based) | | |
|---|---|---|
| Initial phase | Start date DD/MM/YY | Rifater plus Ethambutol (2 months) plus pyridoxine |
| Continuation phase | Start date DD/MM/YY | Rifinah (4 months) plus pyridoxine |

| Amount of treatment prescribed at this appointment | Next appointment | Required monitoring prior to next appointment |
|---|---|---|
| months | DD/MM/YY | |

| Initial eye screening result<br>Date: | Snellen test:<br>Colour vision discrimination tests: |
|---|---|

Free text

Cc Kirsteen Hill, Antimicrobial Pharmacist and Margaret Ramsay, Senior Specialist Nurse Health Protection Directorate of Public Health

# Tayside TB Pathway: Drug induced hepatitis and reintroduction [1,2]

**ALT/AST raised but < 2 X normal** → **Repeat LFTs at 2 weeks: If levels have fallen, repeat tests only required if symptomatic**

**ALT/AST > 2 X normal** → **Check LFTs weekly for 2 weeks, then every 2 weeks until normal**

**ALT/AST > 3 X upper limit of normal, in presence of symptoms**
**Or**
**ALT/AST > 5 X upper limit of normal, in the absence of symptoms**

- Stop hepatotoxic medication including Isoniazid, Rifampicin and Pyrazinamide
- Check/consider hepatitis screen (A, B and C, and if clinically indicated delta and hepatitis E)
- As resolution of the hepatitis may be prolonged, consider treating with alternative anti-tuberculosis medications with regular monitoring of LFTs (see next page for alternative medication options).
- Once ALT/AST drops to less than 2 X the upper limit of normal and symptoms have significantly improved, first-line anti-tuberculosis medications can be restarted using a re-introduction regimen (see next page for suggested re-introduction regimen).
- If the drugs cannot be restarted or the initial reaction was life-threatening, then seek specialist advice regarding an alternative regimen.

# Tayside TB Pathway: Drug induced hepatitis and reintroduction [1,2]

**PLEASE NOTE:**

**If isoniazid, rifampicin, and pyrazinamide stopped because of drug-induced hepatitis and the patient is infectious: seek specialist advice and consider treating with ethambutol, streptomycin +/- moxifloxacin or levofloxacin (link to quinolone warnings) until liver function normalises and isoniazid and rifampicin can be re-introduced. Note: moxifloxacin can cause hepatitis [1,2].**

**Suggested regimen for the reintroduction of anti-tuberculosis drugs following drug induced hepatitis, in adults [1]**

| | Isoniazid | Rifampicin | Pyrazinamide |
|---|---|---|---|
| Day 1 | 100mg | Omit | Omit |
| Day 2 | 200mg | Omit | Omit |
| Day 3 | 300mg | Omit | Omit |
| Day 4 | 300mg | 150mg | Omit |
| Day 5 | 300mg | 300mg | Omit |
| Day 6 | 300mg | 450mg | Omit |
| Day 7 | 300mg | 450mg (<50kg)<br>600mg (≥ 50kg) | Omit |
| Day 8 | 300mg | 450mg (<50kg)<br>600mg (≥ 50kg) | 250mg |
| Day 9 | 300mg | 450mg (<50kg)<br>600mg (≥ 50kg) | 500mg |
| Day 10 | 300mg | 450mg (<50kg)<br>600mg (≥ 50kg) | 1000mg |
| Day 11 | 300mg | 450mg (<50kg)<br>600mg (≥ 50kg) | 1500mg (<50kg)<br>2000mg (>50kg) |
| Day 12 | 300mg | 450mg (<50kg)<br>600mg (≥ 50kg) | 1500mg (<50kg)<br>2000mg (>50kg) |

(1) British Infection Society guidelines for the diagnosis and treatment of tuberculosis of the central nervous system in adults and children. Thwaites G, Fisher M, Hemingway C, Scott G, Solomon T, Innes J; British Infection Society. J Infect. 2009 Sep;59(3):167-87. doi: 10.1016/j.jinf.2009.06.011. Epub 2009 Jul 4. PMID: 19643501

(2) British HIV association. BHIVA guidelines for the management of TB/HIV co-infection in adults 2017. (online) Available from: https://www.bhiva.org/file/wciyxvzCuTmjD/BHIVA-TB-HIV-co-infection-guidelines-consultation.pdf.

# Tayside TB Pathway: Steroids for CNS TB

**CNS TB:**
**At the start of an anti-TB treatment regimen, offer people with active TB of the central nervous system dexamethasone or prednisolone, initially at a high dose with gradual withdrawal over 4-8 weeks. An example of a suitable regimen is listed in table below (Source: NICE Guidelines) [2]**

| | Stage [a] | |
|---|---|---|
| Dose by week | 1 | 2 or 3 |
| Week 1 | 0.3 mg/kg/day (IV Dexamethasone) | 0.4 mg/kg/day (IV Dexamethasone) |
| Week 2 | 0.2 mg/kg/day (IV Dexamethasone) | 0.3 mg/kg/day (IV Dexamethasone) |
| Week 3 | 0.1 mg/kg/day (oral Dexamethasone) | 0.2 mg/kg/day (IV Dexamethasone) |
| Week 4 | 3 mg/day (oral Dexamethasone) | 0.1 mg/kg/day (IV Dexamethasone) |
| Week 5 | 2 mg/day (oral Dexamethasone) | 4 mg/day (oral Dexamethasone) |
| Week 6 | 1 mg/day (oral Dexamethasone) | 3 mg/day (oral Dexamethasone) |
| Week 7 | – | 2 mg/day (oral Dexamethasone) |
| Week 8 | – | 1 mg/day (oral Dexamethasone) |

[a] According to the modified British Medical Research Council criteria for disease severity:
Stage 1: Glasgow coma score of 15 without focal neurological deficits; alert and oriented.
Stage 2: Glasgow coma score of 14–11 or 15 with focal neurological deficits.
Stage 3: Glasgow coma score of 10 or less, with or without focal neurological deficits.
Abbreviation: IV, intravenous

(2): NICE guideline [NG33] Tuberculosis. Published date: January 2016 Last updated: May 2016

Developed by: A Wilson, ID Registrar
Approved by: AMG/TB MDT March 2019
Updated: April 2023
Review: April 2026

NHS Tayside

# OUTPATIENT PRESCRIPTION

**ANTI-TUBERCULOUS MEDICATION**
**INITIATION PHASE**

**Will be collected from:**

**Required by:**

**Clinic attended/charge to:**

**Name:**

**CHI Number:**

**Weight:**

**Please supply for the patient named above the medicines marked below:**

| Drug (Score off those not required) | Dose to be taken half an hour before breakfast | Number of MONTHS supply** |
|---|---|---|
| RIFATER | tablets DAILY | |
| ETHAMBUTOL | mg DAILY | |
| PYRIDOXINE | 10mg DAILY | |
| | | |
| | | |

**Prescriber's Signature:** **Date:** **Bleep:**

**Pharmacist's Check:** **Date:**

**Dispensed by:** **Checked by:** **Date:**

**STANDARD DOSES:**
**Rifater dose according to body weight**
**< 40 kg 3 tabs**
**40-49 kg 4 tabs**
**50-64 kg 5 tabs**
**> 65 kg 6 tabs**

**IF COMBINATION PRODUCT NOT SUITABLE:**
**Rifampicin <50kg 450mg daily, > 50kg 600mg daily**
**Pyrazinamide <50kg 1.5g daily, >50kg 2g daily**
**Isoniazid 300mg daily**

**Pyridoxine 10mg daily (with all isoniazid preparations)**
**Ethambutol: 15mg/kg rounded to nearest 100mg**

****QUANTITY: suggested 2 month supply**

NHS Tayside

# OUTPATIENT PRESCRIPTION

**ANTI-TUBERCULOUS MEDICATION**

**CONTINUATION PHASE**

**Will be collected from:**

**Required by:**

**Clinic attended/charge to:**

**Name:**

**CHI Number:**

**Weight:**

**Please supply for the patient named above the medicines marked below:**

| Drug (Score off those not required) | Dose to be taken half an hour before breakfast | Number of MONTHS supply** |
|---|---|---|
| *RIFINAH 300/150 weight > 50kg | TWO tablets DAILY | |
| *RIFINAH 150/100 weight < 50kg | THREE tablets DAILY | |
| PYRIDOXINE | 10mg DAILY | |
| | | |
| | | |
| | | |
| | | |

**Prescriber's Signature:** **Date:** **Bleep:**

**Pharmacist's Check:** **Date:**

**Dispensed by:** **Checked by:** **Date:**

**STANDARD DOSES:**
***Rifinah (Rifampicin/Isoniazid) - to accommodate pack size it is acceptable for each month supply requested to dispense one original pack (28 day supply)**

**Pyridoxine 10mg daily (with all isoniazid preparations)**

**IF COMBINATION PRODUCT NOT SUITABLE:**
**Rifampicin <50kg 450mg daily, > 50kg 600mg daily**
**Pyrazinamide <50kg 1.5g daily, >50kg 2g daily**
**Isoniazid 300mg daily**
**Ethambutol 15mg/kg daily (rounded to nearest 100mg)**

****QUANTITY: suggested 4 months supply**