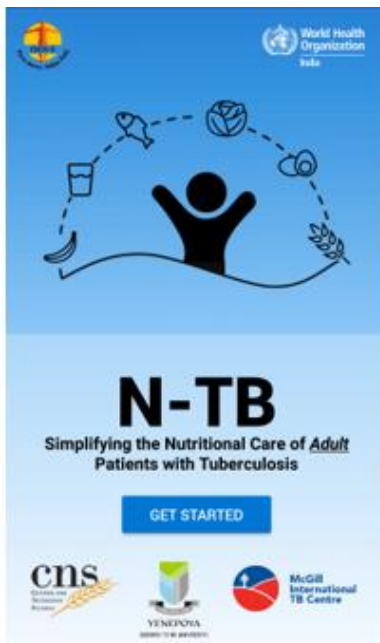


McGill  
International  
TB Centre

## N-TB, an app for nutritional assessment & counselling of patients with tuberculosis

On World TB Day (24 March), the Center for Nutrition Studies, Yenepoya University, Mangalore in association with McGill International TB Centre, Montreal is pleased to announce the public release of **N-TB**, an android mobile based application for the nutritional assessment and counselling of adult patients with TB. This app, endorsed by the Revised National Tuberculosis Control Programme and WHO India, was included in the new initiatives unveiled by Prime Minister Narendra Modi during the Delhi End TB Summit on March 13<sup>th</sup> 2018.



TB often results in significant weight loss, which can exacerbate underlying undernutrition. Studies in India have shown that 50% of adult men and women with TB weigh below 42 kg and 38 kg respectively. Studies in rural India have also shown life-threatening levels of low BMI. Undernutrition in TB patients has been shown to be a consistent risk factor for death, and this is important in a country like India where current levels of TB mortality are high with 423,000 deaths due to TB. Undernourished patients are also at higher risk of serious side-effects of drugs, poor absorption of drugs, reduced ability to return to work, and recurrence of disease after cure.



Undernutrition in TB patients is now considered a medical condition like co-existing diabetes, or HIV infection. WHO recommends that nutritional assessment, counselling and support should be considered an integral part of TB care. The RNTCP released a Guidance document on Nutritional Care and Support for patients with tuberculosis in India in 2017, one of the


first countries to do so. This year has seen the launch of nutritional support initiatives in the form of food rations by many states. The Union Government also announced a direct benefit transfer of Rs. 500 per month, to be made operational from April 2018, to enable nutritional support for TB patients.

All these initiatives will require healthcare providers to be skilled in nutritional assessment and counselling. The **N-TB** is the first of its kind app for healthcare providers. It enables the classification of the nutritional status of the patient by calculating the body mass index (BMI). If the BMI is very low, it red-flags this and provides an overview of management of severe undernutrition. The app also provides the weight gain required during treatment to achieve a desirable weight, and the recommended daily caloric and protein intake (screen shots on the next page). It has counselling tips on diet with an emphasis on the value of locally available foods in contrast to costly nutritional supplements, activity and lifestyle.

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# N-TB

Simplifying the Nutritional Care of Adult Patients with Tuberculosis


GET STARTED

☰
N-TB: Calculator

Nutritional assessment and counseling tool for adult patients with tuberculosis


HEIGHT



Input height (cm)

150

WEIGHT



Input weight (kg)

35

ENTER

☰
N-TB: Results

Extreme underweight

Severe underweight


Moderate underweight

Mild underweight

Normal

Overweight

Obese



BMI VALUE

15.5 kg/m<sup>2</sup>

Next >
< Prev
Next >

☰
N-TB: Severe Underweight Advice

This patient is severely underweight with BMI 15.5 kg/m<sup>2</sup>. Severely undernourished patients are likely to have extensive tuberculosis, and adverse outcomes, including early death during treatment. They require close nutritional and clinical monitoring.

Assess

Appetite and oral intake, performance status, vital signs, anemia, pedal edema, medical condition.


Advise

Outpatient care if ALL the following criteria are met

- patient is eating, with a reliable source of food at home
- performance status is satisfactory (e.g. ambulatory and able to look after themselves)
- vital signs are stable


☰
N-TB: Target Weights

Desirable weight gain




12.3 kg

Minimum Weight Gain Required




6.7 kg

Desirable Daily Caloric Intake



1900 kcal

Desirable Daily Protein Intake Range



57 - 71 g

< Prev
Next >

☰
N-TB: General Tips

Advise

Diet

Adequate and balanced

- cereals and pulses
- milk
- oils and nuts
- fruits and vegetables
- eggs, flesh foods

Cereals, oils and nuts are energy rich, while pulses, milk and dairy products, eggs and flesh foods are rich in proteins. Underweight patients need more of these foods.

Frequent feeds initially, when appetite is likely to be poor.

Later, when normal appetite returns, advise 3 meals and at least 2 snacks.

Supplements

- Costlier foods and nutritional supplements are not necessarily better than locally available foods.
- A multivitamin pill is adequate to meet micronutrient requirements if intake is very poor.



सत्यमेव जयते

भारत सरकार

Government of India

स्वास्थ्य एवं परिवार कल्याण विभाग

Ministry of Health & Family Welfare

नियंत्रण भवन, आई दिल्ली - 110106

Nirman Bhawan, New Delhi-110 106

Date: 21.10.2018

Dear

**Sub: Utilization of N-TB mobile application for implementation of Guidance document on nutritional care & support for patients with TB in India – Reg.**

Govt is committed to ending TB by 2025, five years ahead of the Global Sustainable Development goals. In order to achieve this, it is important to address the social determinants of Health. Undernutrition is an established risk factor for progression of latent TB infection to active TB, increases the risk of severe disease, death, drug toxicity, drug malabsorption & relapse after cure and at the population level contributes to an estimated 55% of annual TB incidence in India. Moreover, TB leads to weight loss, wasting and worsening of nutritional status. Therefore, Undernutrition and tuberculosis (TB) have a bidirectional relationship.

Addressing undernutrition and providing nutritional support to households with TB patients would be key to achieving the Government of India's ambitious goal. In order to address this significant risk factor, the "Guidance document on nutritional care & support for patients with TB in India" was developed by Central TB Division and released on the occasion of World TB Day 2017.

In order to facilitate implementation of the technical aspects of the nutritional assessment and appropriate supplementation, the N-TB app has been developed by CTD with support of Center for Nutrition Studies, Yenepoya (Deemed to be University), WHO and McGill International TB centre. It is a tool for health care workers to calculate BMI of TB patients, know how to counsel patients and choose the food items as per their BMI to improve BMI while on treatment and later. It is available for download on Android devices - <https://play.google.com/store/apps/details?id=com.nexa.ntb> and iOS device (<https://itunes.apple.com/in/app/n-tb/id1402523153?mt=8>). The training materials which may be used for sensitizing the staff on this app are attached for reference.

You are requested to widely disseminate the information on this app and ensure that all the program staff install the application on their Android tablets and utilize the same in counselling of the patients.

Yours sincerely

(Dr K S Sachdeva)

Annexures: As mentioned above

To

State TB Officers (All States/UTs)

Copy to

PPS to AS & DG (RNTCP & NACP), MoHFW

PPS to JS (TB), MoHFW

District TB officers (All Districts of all States/UTs)