# Evidence Update

Summary of a Cochrane Review

**Tuberculosis Series** 

Should people on TB treatment be given nutritional supplements?

Data on the effects of food or micronutrients on illness recovery are limited in patients with TB.

# Background

People with TB lose weight and may have deficiencies of micronutrients. This in turn may delay recovery from the disease.

# **Inclusion criteria**

**Studies:** 

Randomized controlled trials.

### **Participants:**

People being treated for active tuberculosis.

### Intervention:

Intervention: any oral nutritional supplement given for at least four weeks.

Control: no nutritional intervention, placebo or dietary advice only.

### **Outcomes:**

Death, body weight or weight change, sputum test positive at follow-up.

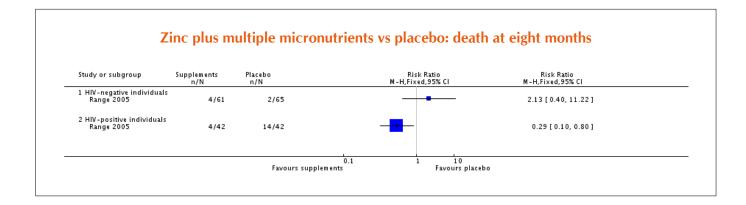
# **Results**

- Twelve trials, involving 3393 participants, were included; five were adequately concealed.
- Underweight adults with tuberculosis given a highenergy supplement gained more weight at six weeks compared with those receiving dietary advice only (mean difference 1.73 kg, 95% confidence interval 0.81 to 2.65; 34 participants, 1 trial).
- Vitamin D was associated with fewer sputum positive cases at six weeks compared to placebo (relative risk 0.33, 95% Cl 0.14 to 0.76; 226 participants, 2 trials), but by eight weeks there was no significant difference.
- HIV-positive and HIV-negative participants had no differences in number of deaths between multiple micronutrient supplement and control groups (2190 participants, 3 trials). In HIV-positive participants who became sputum-test negative at one month, there were fewer relapses to sputum positive by eight months (RR 0.34, 95% Cl 0.12 to 0.90; 241 participants, 1 trial).
- HIV-positive participants taking multiple micronutrients plus additional zinc had fewer deaths after eight months of treatment than the placebo group (RR 0.29, 95% CI 0.10 to 0.80; 84 participants, 1 trial). There was no difference in HIV-negative individuals. Participants taking multiple micronutrients plus zinc also gained more weight at seven months (MD 2.37 kg, 95% CI 2.21 to 2.53; 192 participants).
- In one trial, participants receiving vitamin A plus zinc had a higher body weight at six months compared with placebo (MD 3.10 kg, 95% Cl 0.74 to 5.46; 80 participants).
- Trials assessing a high cholesterol diet, zinc alone, vitamin A, arginine, and vitamin A plus selenium showed no significant effect of supplementation.

Adapted from Abba K, Sudarsanam TD, Grobler L, Volmink J. Nutritional supplements for people being treated for active tuberculosis. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD006086. DOI: 10.1002/14651858.CD006086.pub2. *Evidence Update* published in March 2009.

# High energy oral supplements vs dietary advice: change in body weight

Study or subgroup	Suppleme N	Mean(SD)	Advice only N	Mean(SD)		Difference d,95% Cl			Mean Difference IV,Fixed,95% Cl	
1 6 weeks Paton 2004	19	2.57 (1.78)	15	0.84 (0.89)					1.73 [ 0.81, 2.65 ]	
2 24 weeks Paton 2004	19	4.44 (2.73)	11	2.66 (2.51)					1.78 [-0.15, 3.71]	
				Favours advice	-5	0 Favours s	5 supplements	10		



# **Authors' conclusions**

### **Implications for practice:**

High energy supplements and some combinations of zinc with other micronutrients may help people being treated for tuberculosis to gain weight. A combination of zinc and multiple micronutrients may prevent deaths in people who are also HIV-positive.

### **Implications for research:**

Further trials to assess the effect of a range of nutritional supplements for people being treated for active tuberculosis living in areas where HIV/AIDS is prevalent are needed; several such trials are currently being undertaken.







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