

Analyses of Diets suggested by the
Technical Commission of the League of Nations.

Age	Calories	Ptn. gm.	Ca. gm. From	P. gm. Protective	Fe. mg. Foods	Vitamins I. Units				
						A	B ¹	C	D	
1 - 2 years	835	37	{	1.12	0.93	4.5				
2 - 3 "	1,050	46								
3 - 5 "	1,215	53	1.28	1.08	5.7					
5 - 7 "	1,430	64	1.30	1.20	7.6					
12-14 "	1,255	⁸⁰ 69	1.45	1.40	13.1					
Preg. and Nursing Women	2,440	105	1.6	1.7	10.2	Over 5,000	Over 150	Over 500	About 300	

The diets from which these nutrients are derived do not take into account the energy requirements of muscular exercise. These requirements would ordinarily come mainly from cereals. The pregnant or nursing woman, for example, would require 600 - 800 calories in addition and the cereals necessary to provide these calories would supply more protein, Fe and P., more vitamin B and small amounts of other minerals depending on the proportion of whole grain (e.g. wheat or oats) eaten.

	Worker	No. of children	Period of Exper.	Ages and Supplements		Gain in Weight	% Gain	Gain in Height	% Gain	Remarks
Gt. Britain 7 centres	Leighton and Clark	1425	7 mths.	6-7 yrs. $\frac{5}{4}$ pt.	(1) Whole Milk (2) Sep. Milk	) 3.58 lbs. )		) 1.46 ins.)		Difference in gain in Ht. and Wt. between whole milk and sep. milk groups was not significant except in 6 yrs. old where whole milk was significantly better.
				9-14 yrs. 1 pt.	(3) Biscuits = Calories in sep. milk (4) Nil	) ) 2.46 lbs. )		) ) 1.18 ins.)		
Lanarkshire	Leighton and McKinley	20,000	4 mths.	10,000	(1) Controls (2) $\frac{3}{4}$ pt. raw (3) $\frac{3}{4}$ pt. past.	) 4-6 ozs.) more) than) Controls		) .1 ins.) more) than) Controls		No significant difference between raw and pasteurised.
New Zealand	Turbott and Rolland	93 + 25 Controls	13 wks.	Under 9 Over 9	1 pint $\frac{1}{2}$ pint Controls	) ) 1.65 kg.) 0.66 kgs.		0.8 ins. 0.4 ins.		Ages 10-11 did best. 12-14 gained less height but more weight than 5-7 c.f. Leighton & Clark. No appreciable difference between 1 pt. and $\frac{1}{2}$ pt. suppl.
South India	Aykroyd	122 boys 11-15 yrs.	14 wks.		Powder = 8 ozs. sk. milk Millet = Cal. in 8 ozs. sk. milk	4.7 lbs. 2.1 lbs.		0.61 ins. 0.35 ins.		
			10 $\frac{1}{2}$ wks.	Groups reversed	Sk. milk Millet	3.07 lbs. 1.10 lbs.		0.69 ins. 0.43 ins.		
Japan		319 + 416 Controls	6 mths.		180-360 c.c. milk Controls	1.163 kg. 0.947 kg.		2.83 cms. 2.43 cms.		

15 = 1.0.

12-14 = 90.

9-12. $\frac{.80}{3) 2.70}$ man value per day
 .90.

The energy value
 3400 ^{calories} as purchased or 3000. cover

Protein - 100 gm

Fat - 100

Carbohydrates

Inorganic salts

Vitamins A, B, C, D, E.

Water 1500

3000

$\frac{.90}{2700}$ energy coverage for the

Protein 90 gm	9000	gm protein
Fat 90 X	9000	"
Carb 450 gm	40500	
Water 1500		
20	58500	

PHYSICAL EFFICIENCY INDEX

Maximum = 50.

(1) <u>Pulse Rate:-</u>		<u>Deduction</u>	(2) <u>Blood Pressure:-</u>		<u>Deduction</u>
Sitting - over	78 per minute	1	Systolic pressure -		
"	84 " "	2	over 130 mm. Hg.		1
"	96 " "	3	" 140 "		2
On changing, Sitting to Standing-			" 150 "		3
Increase of 24 per minute or over		1	" 160 "		4
" " 36 " " " "		2	Diastolic pressure -		
After exercise -			below 75 mm. Hg.		1
Increase to 108 per minute or over		1	" 70 "		2
" " 120 " " " "		2	" 60 "		5
" " 132 " " " "		3	above 90 "		1
" " 144 " " " "		4	" 94 "		2
Return to normal rate -			" 98 "		5
over 30 secs.		1	Pulse Pressure { above 50 "		1
" 45 "		2	" 60 "		2
" 60 "		3	" 70 "		3
(3) <u>Breath-holding</u> - under 70 secs.		1	(4) <u>Expiratory Force</u> - under 110 mm. Hg.		1
" " 60 " "		2	" 100 " "		2
" " 50 " "		3	" 90 " "		3
(5) <u>Knee Jerks</u> - + +		2	(6) <u>Tremor</u> - slight, hands		1
(7) <u>Self-balancing</u> -			" eyes		1
2 attempts	1) for		marked, hands		3
3 " "	2) each		" eyes		2
0 " "	3) side.				
(8) <u>Endurance (40 mm. Hg.) test</u> -			Pulse Rate during Test -		
Time below 52 secs.			Gradual rise - starting 6 or 7		
" " 45 " "		3	(per 5 seconds)..1		
" " 40 " "		6	" " starting 8 (per		
			5 seconds).....3		
			Immediate sustained rise to 8		
			(per 5 seconds) or over..2		
			Immediate rise (in first 15		
			seconds) to 11 (per 5 seconds)		
			or over..3		
			Immediate rise to 12 (per 5		
			seconds) or over...4		
			Marked immediate rise with		
			subsequent rapid fall in rate		
			(inside 40 seconds) 5		

FIT = 40 - 50

DOUBTFUL = 35 - 40

UNFIT = Under 35.

85. It will be seen that the index is arrived at by deducting marks for non-effectiveness. The absolutely physically efficient pilot would, therefore, obtain the maximum marks, 50, but such efficiency is seldom found. As a general rule it may be laid down that:-

- 40 - 50 marks indicates physical fitness for flying duties;
- 35 - 40 marks indicates doubtful fitness;
- under 35 marks indicates unfitness for flying duties.

In respect of the doubtful class (35-40) the whole facts of the case must be carefully reviewed, and from these an opinion can be formed as to possible fitness or otherwise, and in the case of unfitness, whether this be temporary or permanent.

86. Broadly speaking, therefore, in forming his final conclusion the assessor assures himself that (1) the subject presents such physiological characteristics that he is likely to become an efficient pilot, and (2) he has no history or present sign of any defect or disease likely to render him unfit for such duty.

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