



| Introduction  | Healthy adult                                                                                                                                                                                      | Infant nutrition                                                                                                                                                         | Childhood nutrition                                                                                                                                     | Adolescent nutrition                                                                                                                                                | Elderly nutrition                                                                                                           | Gestational nutrition                                                                                                                                  | Lactation nutrition                                                                                                 |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|               | <b>Optimal Health:</b><br>Nutrition, Lifestyle, Exercise.<br>Physiological, Area, Culture                                                                                                          | - Organs and tissues immaturity<br>- Accelerated growth<br><b>Milk:</b> Breast, Cow, Formula                                                                             | ↑Energy, ↑Growth, Balanced diet (avoid diseases)<br>Organs & tissues immaturity                                                                         | <b>"Change"</b> . Puberty.<br>↑Growth, Body composition, <b>Lifestyle</b> (Autonomy Body concern, Drugs...)                                                         | <b>"Aging"</b><br>Nutrition: Psychosocial & Physiological factors (body composition, ↓digestion)                            | ↑Anabolism (New tissues) & ↑Catabolism (↑energetic needs, Diabetes)<br>+11-13 kg                                                                       | ↑BMR → Nutrients synthesis (Breast Milk)<br><br>Lactation → lose the weight gained + union                          |
| Energy        | TDEE = BMR * PAL<br>BMR → Henry formula<br>PAL → 1,4 / 1,6 / 1,8 / 2,0<br><br>♂ 2340 - 3224 kcal<br>♀ 1887 - 2579 kcal<br><br>Every Move Counts!                                                   | <b>&lt;6 months:</b><br>570 kcal<br>>43 kcal/kg<br><br><b>&gt;6 months:</b><br>♂ 600 - 880 kcal<br>♀ 550 - 667 kcal                                                      | ↑BMR ↑PAL<br><br><b>Pre-school age:</b><br>750-1200 kcal<br><br><b>School age:</b><br>1700-1900 kcal                                                    | <b>11-14y:</b> 2600 kcal<br><br><b>15-17y:</b> 2800 kcal<br><br>Exercise: 60 min/day, vigorous >3 days/week                                                         | ↓BMR ↓PAL<br><br>♂ 2000 kcal<br>♀ 1700 kcal<br><br>Exercise: 75-150 min/week at 60% MHR                                     | Quarter increase:<br><b>1st:</b> +69 kcal/day<br><b>2nd:</b> +263 kcal/day<br><b>3rd:</b> +500 kcal/day<br><br>Moderate soft exercise                  | <b>1st semester:</b><br>+500 kcal/day<br><br>Exercise recovery activity<br><br>Breastfeed: ↓weight (back to normal) |
| Proteins      | 0,83 g/kg/day<br>♂60 g/day ♀48 g/day<br><br><b>&lt;0,45</b> Marasmus and Kwashiorkor<br><br><b>&gt;3</b> Kidney problems, ↑urea ≈ gout, acidosis                                                   | <b>&lt;6 months:</b><br>1,52 g/kg/day<br>9 g/day<br><br><b>&gt;6 months:</b><br>1,1-1,3 g/kg/day                                                                         | <b>Pre-school age:</b><br>0,92 - 1 g/kg/day<br><br><b>School age:</b><br>0,91 - 0,92 g/kg/day                                                           | <b>11-14y:</b><br>♂0,90 g/kg/day<br>♀0,88 g/kg/day<br><br><b>15-17y:</b><br>♂0,87 g/kg/day<br>♀0,84 g/kg/day                                                        | 0,83 → 1 g/kg/day<br>15 → 25% calories<br><br>30 → 40% animal protein<br><br>avoid sarcopenia and protein malnutrition      | +25g = 1,1 g/kg/day (real weight)<br><b>1st:</b> +1 g/day<br><b>2nd:</b> +9 g/day<br><b>3rd:</b> +28 g/day<br><br>combine vegetable and animal protein | 1,3 g/kg/day (real weight)<br><br><b>1st sem:</b> +19 g/day<br><b>2nd sem:</b> +13 g/day<br><br>vegetable+animal    |
| Carbohydrates | >130 g/day<br>45-65% calories<br><br>↑ <b>complex carbs</b><br><b>fibre</b> 25 g/day<br><b>sugars</b> <10% calories<br><br>glycaemic index & load                                                  | <b>&lt;6 months:</b><br>60 g/day<br>no fibre<br><br><b>&gt;6 months:</b><br>~50% calories<br>fibre: 10 g/day                                                             | same as adults<br><br><b>Pre-school age:</b><br>fibre: 10 g<br><br><b>School age:</b><br>fibre: 14-16 g                                                 | same as adults<br><br><b>11-14y:</b><br>fibre: 19 g<br><br><b>15-17y:</b><br>fibre: 21 g                                                                            | same as adults                                                                                                              | same as adults                                                                                                                                         | same as adults                                                                                                      |
| Fats          | 20-35% calories<br>↓↓↓ Sat & Trans FA<br>ω-6 ♂14 ♀11 g/day<br>ω-3 ♂1,6 ♀1,1 g/day<br>EPA+DHA: 250mg<br><br><20% def. >35% CVDs                                                                     | <b>&lt;6 months:</b><br>31 g/day 50-55% kcal<br><br><b>&gt;6 months:</b><br>40% kcal<br>ω-6 4% ω-3 0,5%<br>DHA 100mg                                                     | <b>Pre-school age:</b><br>35-40% calories<br>same as adults<br><br><b>School age:</b><br>same as adults                                                 | same as adults                                                                                                                                                      | 25-30% kcal preventing hyperlipidemia<br><br>SFAs <8%<br>MUFAs 10-15%<br>PUFAs 5-10%<br><br>Cho.<100mg/1000kcal             | same as adults                                                                                                                                         | same as adults                                                                                                      |
| Water         | water, food water and oxidative reactions<br><br>♂ 2,5 L/day<br>♀ 2 L/day<br><br>avoid dehydration and water toxicity                                                                              | <b>&lt;6 months:</b><br>0,7 L/day → present in breast milk<br><br><b>&gt;6 months:</b><br>0,8 - 1 L/day                                                                  | <b>Pre-school age:</b><br>1,1-1,3 L/day<br><br><b>School age:</b><br>1,6-2,1 L/day                                                                      | <b>11-14y:</b><br>♂2,1 L/day<br>♀1,9 L/day<br><br><b>15-17y:</b><br>same as adults                                                                                  | same as adults<br><br>common dehydration → drink even if not thirsty<br><br>careful with mineral composition → hypertension | <b>+0,3</b> L/day → 2,3 L/day                                                                                                                          | <b>+0,7</b> L/day → 2,7 L/day                                                                                       |
| Vitamins      | <u>Fat-soluble:</u><br><b>A</b> → ♂900 µg ♀700 µg<br><b>D</b> → 15 µg<br><b>E</b> → ♂13 mg ♀11 mg<br><u>Water-soluble:</u><br><b>C</b> → ♂110 mg ♀95 mg<br><b>B9</b> → 400 µg<br><b>B12</b> → 4 µg | <u>Fat-soluble:</u><br><b>A</b> → 250 µg<br><b>D</b> → 10 µg<br><b>E</b> → 5 mg<br><u>Water-soluble:</u><br><b>C</b> → 20 mg<br><b>B9</b> → 80 µg<br><b>B12</b> → 1,5 µg | highly variable<br><br><b>Vit. D:</b> 15 µg<br><br><b>Vit. C:</b><br>20 mg (1-3 years)<br>30 mg (4-6 years)<br>45 mg (7-10 years)                       | same as adults<br><b>11-14y:</b><br><b>A</b> → ♂650 µg ♀600 µg<br><b>C</b> → 70 mg<br><br><b>15-17y:</b><br><b>A</b> → ♂750 µg ♀650 µg<br><b>C</b> → ♂100 mg ♀90 mg | same as adults<br><br>↓amount of food, same requirements → deficiencies                                                     | Vitamin A → +50 µg<br>Vitamin C → +10 mg<br>Vitamin B9 → +270 µg<br>Vitamin B12 → +0,5 µg<br><br>yodocefol supplement<br>2µg B12 + 400µg B9            | Vitamin A → +650 µg<br>Vitamin C → +60 mg<br>Vitamin B9 → +170 µg<br>Vitamin B12 → +1 µg                            |
| Minerals      | <b>Na</b> 2 g, <b>K</b> 3,5 g,<br><br><b>Ca</b> 0,95 g, <b>P</b> 550 mg,<br><b>Mg</b> 325 mg, <b>F</b> 3 mg<br><br><b>Fe</b> 16-11 mg, <b>I</b> 150 µg,<br><b>Zn</b> 15 mg, <b>Cu</b> 0,9 mg       | <b>Na</b> 0,2 g, <b>K</b> 750 mg,<br><br><b>Ca</b> 280 mg,<br><b>Mg</b> 80 mg, <b>F</b> 0,4 mg<br><br><b>Fe</b> 11 mg, <b>I</b> 70 µg                                    | highly variable<br><br><b>Ca:</b> 450 mg (1-3 years)<br>800 mg (4-10 years)<br><br><b>Fe:</b> 7 mg (1-6 years)<br>11 mg (7-10 years)<br><b>I:</b> 90 µg | <b>Ca:</b> 1150 mg<br><b>Fe:</b> ♂11 mg ♀13 mg<br><br><b>11-14y:</b><br><b>I:</b> 120 µg<br><br><b>15-17y:</b><br><b>I:</b> 130 µg                                  | same as adults<br><br>control electrolytes, Ca and Fe                                                                       | same as adults<br><br><b>I:</b> +50 µg<br>yodocefol supplement<br>200µg iodine                                                                         | same as adults<br><br><b>K:</b> +0,5 g<br><b>I:</b> +50 µg                                                          |