A análise da composição corporal é um dos campos mais dinâmicos em avaliação nutricional e pode ser utilizada tanto na validação de métodos ou medidas mais simples quanto no diagnóstico direto de indivíduos na prática clínica.

Com base na afirmação acima, analise os quadros abaixo com as medidas de 12 indivíduos recentemente avaliados e elabore o diagnóstico nutricional de cada um deles, comentando e justificando suas opções e resultados.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dados | Sr. J | Sra. A | Sr. P | Sra. M |
| Sexo | Masculino | Feminino | Masculino | Feminino |
| Etnia/cor da pele | Mexicano-americano | Mexicano-americano | Branca | Branca |
| Idade (ano) | 37,17 | 36,25 | 44,42 | 47,17 |
| Altura (cm) | 179,50 | 172,70 | 176,90 | 152,20 |
| Peso (kg) | 132,30 | 150,10 | 111,30 | 80,40 |
| C Cintura (cm) | 127,00 | 144,30 | 116,50 | 103,00 |
| Resistência (R) | 321,66 | . | 431,41 | 459,56 |
| Reactância (Xc) | 42,46 | . | 64,01 | 55,04 |
| Densidade mineral óssea BMD (g/m2) | 1,59 | 1,36 | 1,46 | 1,36 |
| M Magra (kg) | 90,74 | 72,73 | 80,57 | 49,13 |
| M Gorda (kg) | 43,88 | 79,01 | 32,01 | 32,77 |
| Diabetes | Sim | Não | Não | Sim |
| Hipertensão arterial | Sim | Sim | Não | Não |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dados | Sr. L | Sra. B | Sr. H | Sra. D |
| Sexo | Masculino | Feminino | Masculino | Feminino |
| Etnia/cor da pele | Mexicano-americano | Negra | Mexicano-americano | Mexicano-americano |
| Idade (ano) | 39,25 | 45,25 | 39,25 | 36,25 |
| Altura (cm) | 172,40 | 168,30 | 172,40 | 172,70 |
| Peso (kg) | 86,30 | 75,60 | 86,30 | 150,10 |
| C Cintura (cm) | 95,50 | 85,50 | 95,50 | 144,30 |
| Resistência (R) | 406,82 | 512,84 | 406,82 | . |
| Reactância (Xc) | 60,07 | 70,80 | 60,07 | . |
| Densidade mineral óssea BMD (g/m2) | 1,52 | 2,26 | 1,52 | 1,36 |
| M Magra (kg) | 64,65 | 62,82 | 64,65 | 72,73 |
| M Gorda (kg) | 22,58 | 15,72 | 22,58 | 79,01 |
| Diabetes | Não | Não | Sim | Não |
| Hipertensão arterial | Sim | Não | Não | Sim |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dados | Sr. C | Sra. I | Sr. R | Sra. S |
| Sexo | Masculino | Feminino | Masculino | Feminino |
| Etnia/cor da pele | Negra | Mexicano-americano | Branca | Mexicano-americano |
| Idade (ano) | 14,92 | 11,92 | 17 | 13,42 |
| Altura (cm) | 183,6 | 163 | 165,8 | 170,4 |
| Peso (kg) | 92,6 | 68,3 | 65 | 72,6 |
| C Cintura (cm) | 84,8 | 90,8 | 75 | 89,4 |
| Resistência (R) | 412,47 | 561,96 | 441,65 | 524,66 |
| Reactância (Xc) | 57,97 | 60,45 | 61,83 | 58,94 |
| Densidade mineral óssea BMD (g/m2) | 1,53 | 1,07 | 1,46 | 1,23 |
| M Magra (kg) | 76,96 | 45,23 | 54,81 | 50,46 |
| M Gorda (kg) | 17,02 | 23,32 | 10,87 | 23,03 |
| Diabetes | Não | Não | Não | Não |
| Hipertensão arterial | Sim | Não | Não | Sim |

Table S5: Lean Mass/Height2 (kg/m2) vs. Age in adult subjects.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Males** | | | | | | | | | | | | |
|  | White | | |  | Black | | |  | Mexican American | | | |
| Age | M | σ (S) | L |  | M | σ (S) | L |  | M | | σ (S) | L |
| 20 | 18.98 | 2.50 | -1.115 |  | 19.50 | 2.98 | -1.103 |  | 18.78 | | 2.22 | -0.738 |
| 25 | 19.31 | 2.52 | -1.022 |  | 19.97 | 3.01 | -0.969 |  | 19.36 | | 2.23 | -0.703 |
| 30 | 19.60 | 2.54 | -0.929 |  | 20.33 | 3.01 | -0.835 |  | 19.83 | | 2.24 | -0.667 |
| 35 | 19.85 | 2.56 | -0.835 |  | 20.54 | 2.98 | -0.701 |  | 20.16 | | 2.25 | -0.633 |
| 40 | 20.04 | 2.56 | -0.740 |  | 20.60 | 2.93 | -0.567 |  | 20.34 | | 2.26 | -0.600 |
| 45 | 20.15 | 2.55 | -0.643 |  | 20.56 | 2.88 | -0.434 |  | 20.37 | | 2.26 | -0.571 |
| 50 | 20.15 | 2.53 | -0.546 |  | 20.47 | 2.85 | -0.301 |  | 20.31 | | 2.25 | -0.543 |
| 55 | 20.07 | 2.50 | -0.447 |  | 20.35 | 2.83 | -0.169 |  | 20.15 | | 2.21 | -0.517 |
| 60 | 19.91 | 2.44 | -0.348 |  | 20.19 | 2.80 | -0.037 |  | 19.93 | | 2.16 | -0.492 |
| 65 | 19.67 | 2.36 | -0.248 |  | 19.95 | 2.77 | 0.096 |  | 19.63 | | 2.10 | -0.467 |
| 70 | 19.36 | 2.26 | -0.148 |  | 19.65 | 2.71 | 0.228 |  | 19.26 | | 2.02 | -0.442 |
| 75 | 18.98 | 2.15 | -0.047 |  | 19.30 | 2.65 | 0.360 |  | 18.84 | | 1.94 | -0.418 |
| 80 | 18.58 | 2.03 | 0.053 |  | 18.93 | 2.58 | 0.493 |  | 18.39 | | 1.85 | -0.393 |
| 85 | 18.16 | 1.92 | 0.154 |  | 18.59 | 2.51 | 0.616 |  | 17.93 | | 1.76 | -0.369 |
| **Females** | | | | | | | | | | | | |
|  | White | | |  | Black | | |  | | Mexican American | | |
| Age | M | σ (S) | L |  | M | σ (S) | L |  | | M | σ (S) | L |
| 20 | 15.60 | 2.01 | -1.404 |  | 17.24 | 2.74 | -0.924 |  | | 15.82 | 2.08 | -1.510 |
| 25 | 15.83 | 2.10 | -1.378 |  | 17.60 | 2.80 | -0.911 |  | | 16.24 | 2.18 | -1.411 |
| 30 | 16.03 | 2.18 | -1.352 |  | 17.87 | 2.84 | -0.898 |  | | 16.58 | 2.28 | -1.311 |
| 35 | 16.19 | 2.26 | -1.326 |  | 18.03 | 2.86 | -0.885 |  | | 16.83 | 2.36 | -1.212 |
| 40 | 16.30 | 2.32 | -1.299 |  | 18.12 | 2.86 | -0.872 |  | | 17.02 | 2.42 | -1.112 |
| 45 | 16.36 | 2.35 | -1.272 |  | 18.13 | 2.84 | -0.859 |  | | 17.14 | 2.45 | -1.013 |
| 50 | 16.35 | 2.36 | -1.244 |  | 18.07 | 2.80 | -0.844 |  | | 17.13 | 2.46 | -0.912 |
| 55 | 16.30 | 2.35 | -1.216 |  | 17.97 | 2.73 | -0.830 |  | | 17.00 | 2.43 | -0.811 |
| 60 | 16.21 | 2.30 | -1.188 |  | 17.88 | 2.66 | -0.816 |  | | 16.81 | 2.39 | -0.710 |
| 65 | 16.08 | 2.24 | -1.160 |  | 17.77 | 2.56 | -0.803 |  | | 16.57 | 2.35 | -0.607 |
| 70 | 15.92 | 2.16 | -1.132 |  | 17.61 | 2.46 | -0.789 |  | | 16.28 | 2.30 | -0.505 |
| 75 | 15.73 | 2.07 | -1.104 |  | 17.39 | 2.35 | -0.776 |  | | 15.97 | 2.25 | -0.402 |
| 80 | 15.53 | 1.98 | -1.076 |  | 17.12 | 2.24 | -0.763 |  | | 15.63 | 2.19 | -0.299 |
| 85 | 15.32 | 1.89 | -1.049 |  | 16.85 | 2.13 | -0.750 |  | | 15.34 | 2.14 | -0.210 |

M = Median, σ = Standard Deviation, L = Skewness (see LMS description in Methods).

Table S1: Fat Mass/Height2 (kg/m2) vs. Age in adult subjects.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Males** | | | | | | | | | | | | | | |
|  | | White | | |  | | Black | | |  | | Mexican American | | |
| Age | | M | σ (S) | L |  | | M | σ (S) | L |  | | M | σ (S) | L |
| 20 | | 5.95 | 2.59 | -0.144 |  | | 4.82 | 2.49 | -0.378 |  | | 5.89 | 2.16 | -0.238 |
| 25 | | 6.37 | 2.69 | -0.114 |  | | 5.59 | 2.81 | -0.299 |  | | 6.80 | 2.44 | -0.173 |
| 30 | | 6.78 | 2.77 | -0.084 |  | | 6.17 | 3.02 | -0.220 |  | | 7.45 | 2.60 | -0.108 |
| 35 | | 7.19 | 2.84 | -0.054 |  | | 6.56 | 3.11 | -0.141 |  | | 7.84 | 2.67 | -0.044 |
| 40 | | 7.57 | 2.89 | -0.024 |  | | 6.81 | 3.14 | -0.062 |  | | 8.06 | 2.67 | 0.019 |
| 45 | | 7.92 | 2.92 | 0.006 |  | | 6.98 | 3.12 | 0.017 |  | | 8.19 | 2.64 | 0.080 |
| 50 | | 8.21 | 2.91 | 0.037 |  | | 7.15 | 3.10 | 0.095 |  | | 8.35 | 2.62 | 0.141 |
| 55 | | 8.49 | 2.90 | 0.067 |  | | 7.42 | 3.12 | 0.174 |  | | 8.51 | 2.60 | 0.200 |
| 60 | | 8.71 | 2.86 | 0.097 |  | | 7.72 | 3.14 | 0.252 |  | | 8.64 | 2.57 | 0.260 |
| 65 | | 8.84 | 2.78 | 0.127 |  | | 7.95 | 3.13 | 0.331 |  | | 8.67 | 2.50 | 0.319 |
| 70 | | 8.82 | 2.66 | 0.157 |  | | 8.10 | 3.08 | 0.409 |  | | 8.54 | 2.39 | 0.378 |
| 75 | | 8.68 | 2.50 | 0.187 |  | | 8.16 | 2.99 | 0.488 |  | | 8.30 | 2.26 | 0.437 |
| 80 | | 8.46 | 2.32 | 0.217 |  | | 8.17 | 2.89 | 0.567 |  | | 8.02 | 2.11 | 0.496 |
| 85 | | 8.20 | 2.14 | 0.248 |  | | 8.15 | 2.78 | 0.640 |  | | 7.72 | 1.97 | 0.556 |
| **Females** | | | | | | | | | | | | | | |
|  | White | | | |  | Black | | | |  | Mexican American | | | |
| Age | M | | σ (S) | L |  | M | | σ (S) | L |  | M | | σ (S) | L |
| 20 | 8.48 | | 3.80 | -0.310 |  | 10.02 | | 4.56 | -0.048 |  | 9.89 | | 3.54 | -0.073 |
| 25 | 8.90 | | 3.89 | -0.249 |  | 10.87 | | 4.81 | 0.003 |  | 10.51 | | 3.70 | -0.047 |
| 30 | 9.35 | | 3.98 | -0.188 |  | 11.59 | | 4.98 | 0.054 |  | 11.07 | | 3.82 | -0.021 |
| 35 | 9.82 | | 4.07 | -0.126 |  | 12.09 | | 5.05 | 0.106 |  | 11.52 | | 3.90 | 0.005 |
| 40 | 10.27 | | 4.13 | -0.064 |  | 12.59 | | 5.10 | 0.157 |  | 11.98 | | 3.98 | 0.031 |
| 45 | 10.72 | | 4.19 | -0.003 |  | 13.01 | | 5.11 | 0.210 |  | 12.46 | | 4.06 | 0.057 |
| 50 | 11.20 | | 4.25 | 0.059 |  | 13.33 | | 5.08 | 0.262 |  | 12.80 | | 4.09 | 0.083 |
| 55 | 11.67 | | 4.29 | 0.121 |  | 13.57 | | 5.00 | 0.316 |  | 12.91 | | 4.04 | 0.109 |
| 60 | 12.03 | | 4.28 | 0.183 |  | 13.68 | | 4.88 | 0.369 |  | 12.88 | | 3.95 | 0.135 |
| 65 | 12.14 | | 4.17 | 0.245 |  | 13.64 | | 4.70 | 0.424 |  | 12.73 | | 3.82 | 0.161 |
| 70 | 12.02 | | 3.99 | 0.308 |  | 13.46 | | 4.48 | 0.478 |  | 12.48 | | 3.67 | 0.187 |
| 75 | 11.70 | | 3.74 | 0.370 |  | 13.04 | | 4.18 | 0.533 |  | 12.16 | | 3.49 | 0.213 |
| 80 | 11.27 | | 3.47 | 0.433 |  | 12.30 | | 3.80 | 0.587 |  | 11.79 | | 3.31 | 0.239 |
| 85 | 10.79 | | 3.19 | 0.495 |  | 11.46 | | 3.42 | 0.639 |  | 11.45 | | 3.15 | 0.262 |

M = Median, σ = Standard Deviation, L = Skewness (see LMS description in Methods).

Table S7: Total Body BMD (g/cm2) vs. Age in adult subjects.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Males** | | | | | | | | | | | |
|  | White | | |  | Black | | |  | Mexican American | | |
| Age | M | σ (S) | L |  | M | σ | L |  | M | σ (S) | L |
| 20 | 1.185 | 0.097 | 0.026 |  | 1.262 | 0.114 | -0.436 |  | 1.144 | 0.093 | -0.205 |
| 25 | 1.196 | 0.100 | 0.026 |  | 1.281 | 0.117 | -0.436 |  | 1.156 | 0.095 | -0.205 |
| 30 | 1.202 | 0.102 | 0.026 |  | 1.285 | 0.119 | -0.436 |  | 1.158 | 0.097 | -0.205 |
| 35 | 1.202 | 0.104 | 0.026 |  | 1.274 | 0.119 | -0.436 |  | 1.155 | 0.098 | -0.205 |
| 40 | 1.198 | 0.106 | 0.026 |  | 1.257 | 0.119 | -0.436 |  | 1.151 | 0.100 | -0.205 |
| 45 | 1.192 | 0.107 | 0.026 |  | 1.243 | 0.119 | -0.436 |  | 1.144 | 0.101 | -0.205 |
| 50 | 1.185 | 0.108 | 0.026 |  | 1.236 | 0.119 | -0.436 |  | 1.136 | 0.102 | -0.205 |
| 55 | 1.175 | 0.109 | 0.026 |  | 1.233 | 0.120 | -0.436 |  | 1.130 | 0.103 | -0.205 |
| 60 | 1.164 | 0.110 | 0.026 |  | 1.228 | 0.121 | -0.436 |  | 1.124 | 0.104 | -0.205 |
| 65 | 1.155 | 0.111 | 0.026 |  | 1.216 | 0.121 | -0.436 |  | 1.117 | 0.105 | -0.205 |
| 70 | 1.144 | 0.111 | 0.026 |  | 1.196 | 0.120 | -0.436 |  | 1.110 | 0.106 | -0.205 |
| 75 | 1.128 | 0.111 | 0.026 |  | 1.170 | 0.119 | -0.436 |  | 1.101 | 0.107 | -0.205 |
| 80 | 1.111 | 0.111 | 0.026 |  | 1.143 | 0.117 | -0.436 |  | 1.092 | 0.107 | -0.205 |
| 85 | 1.093 | 0.111 | 0.026 |  | 1.118 | 0.115 | -0.436 |  | 1.082 | 0.108 | -0.205 |
| **Females** | | | | | | | | | | | |
|  | White | | |  | Black | | |  | Mexican American | | |
| Age | M | σ (S) | L |  | M | σ (S) | L |  | M | σ (S) | L |
| 20 | 1.094 | 0.076 | 0.319 |  | 1.171 | 0.087 | 0.185 |  | 1.084 | 0.076 | 0.667 |
| 25 | 1.106 | 0.081 | 0.319 |  | 1.181 | 0.091 | 0.185 |  | 1.097 | 0.081 | 0.667 |
| 30 | 1.115 | 0.085 | 0.319 |  | 1.189 | 0.095 | 0.185 |  | 1.106 | 0.085 | 0.667 |
| 35 | 1.121 | 0.089 | 0.319 |  | 1.191 | 0.099 | 0.185 |  | 1.110 | 0.090 | 0.667 |
| 40 | 1.122 | 0.092 | 0.319 |  | 1.188 | 0.102 | 0.185 |  | 1.107 | 0.093 | 0.667 |
| 45 | 1.116 | 0.095 | 0.319 |  | 1.177 | 0.105 | 0.185 |  | 1.096 | 0.096 | 0.667 |
| 50 | 1.102 | 0.098 | 0.319 |  | 1.159 | 0.107 | 0.185 |  | 1.077 | 0.098 | 0.667 |
| 55 | 1.083 | 0.099 | 0.319 |  | 1.137 | 0.109 | 0.185 |  | 1.053 | 0.100 | 0.667 |
| 60 | 1.059 | 0.101 | 0.319 |  | 1.111 | 0.110 | 0.185 |  | 1.025 | 0.101 | 0.667 |
| 65 | 1.033 | 0.102 | 0.319 |  | 1.084 | 0.110 | 0.185 |  | 0.996 | 0.101 | 0.667 |
| 70 | 1.006 | 0.102 | 0.319 |  | 1.056 | 0.111 | 0.185 |  | 0.966 | 0.102 | 0.667 |
| 75 | 0.977 | 0.102 | 0.319 |  | 1.028 | 0.111 | 0.185 |  | 0.935 | 0.102 | 0.667 |
| 80 | 0.948 | 0.102 | 0.319 |  | 0.999 | 0.111 | 0.185 |  | 0.905 | 0.102 | 0.667 |
| 85 | 0.920 | 0.102 | 0.319 |  | 0.971 | 0.111 | 0.185 |  | 0.880 | 0.101 | 0.667 |

M = Median, σ = Standard Deviation, L = Skewness (see LMS description in Methods).

O escore Z para os valores LMS pode ser calculado pela fórmula

Z = ((valor observado/M)^L)-1) / (L\*S)