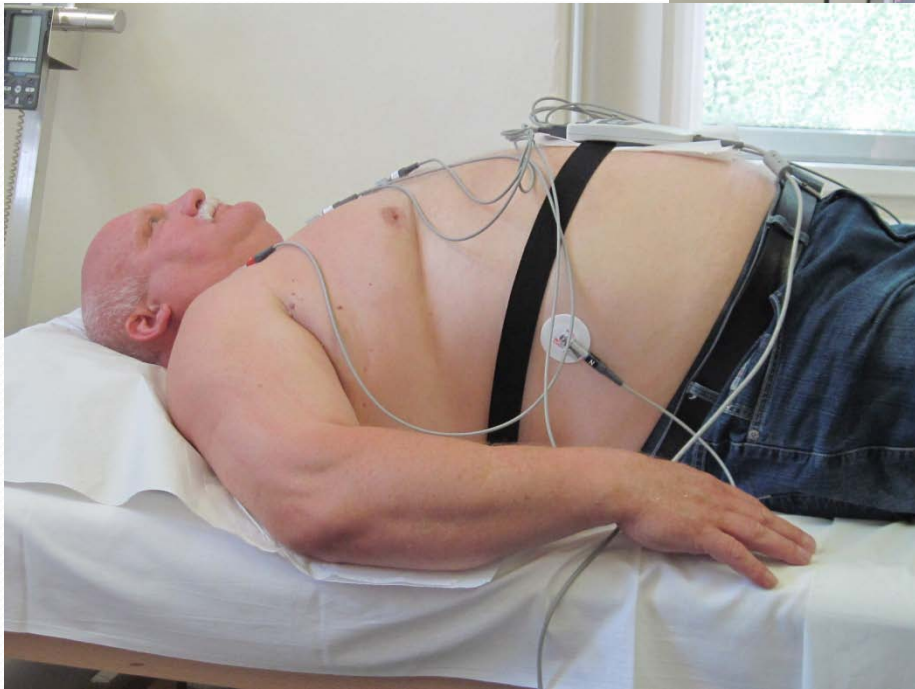



REDUCING RISK FACTORS OF HUNGARIAN OBES PILOTS WITH BODY COMPOSITION MONITOR

HUNGARIAN AVIATION MEDICAL CENTER

Dr Peter VASKÓ Dr Imre MELLES Dr Lilla UNGVARY

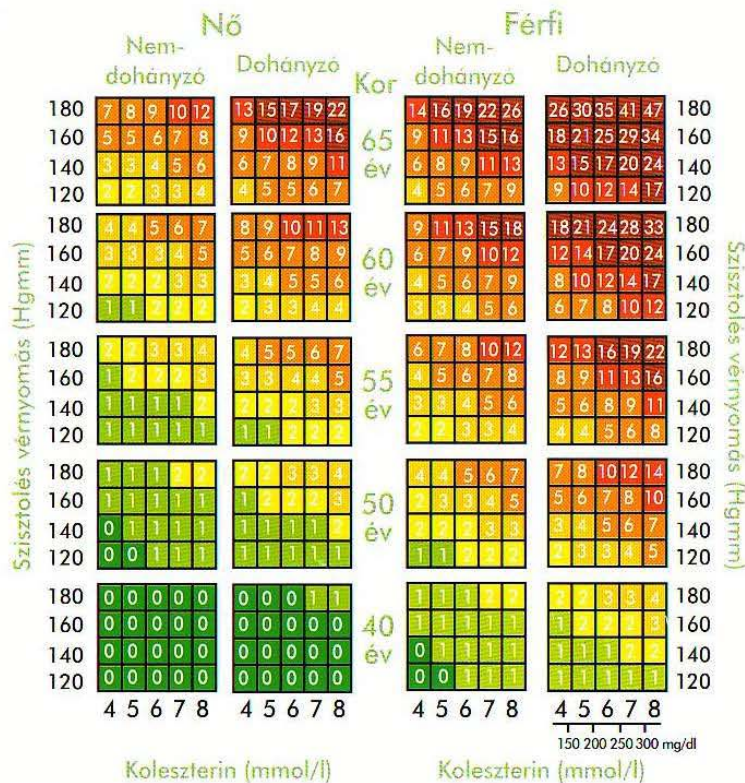


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- It is hard to predict the risk of cardiovascular diseases.
 - If the pilots BMI more than 30, we use SCORE risk evaluation

SCORE EVALUATION

SCORE TÁBLÁZAT

FATÁLIS SZÍV-, ÉS ÉRRENDSZERI ESEMÉNYEK ELŐFORDULÁSÁNAK KOCKÁZATA 10 ÉVEN BELÜL



Egyéb rizikófaktorok (amelyek növelhetik a becsült kockázatot is):

- Triglicerid
- Csökkent glükóztolerancia (IGT)
- Alacsony HDL-Ch
- Fibrinogén
- Apo-B

FRAMINGHAM PONTTÁBLÁZAT

KORONÁRIAESEMÉNYEK ELŐFORDULÁSÁNAK KOCKÁZATA 10 ÉVEN BELÜL

| Férfiak | | | | | Nők | | | | | | | | |
|---------------------------|----------------|-----------------|-------------------|-----------------|----------------|-----------------|---------------------------|-----------------|----------|-----------------|--------|-------|-------|
| Kor (év) | Pont | Kor (év) | Pont | Kor (év) | Pont | Kor (év) | Pont | Kor (év) | Pont | | | | |
| 20-34 | -9 | 55-59 | 8 | 20-34 | -7 | 55-59 | 8 | 20-34 | -7 | | | | |
| 35-39 | -4 | 60-64 | 10 | 35-39 | -3 | 60-64 | 10 | 35-39 | -3 | | | | |
| 40-44 | 0 | 65-69 | 11 | 40-44 | 0 | 65-69 | 12 | 40-44 | 0 | | | | |
| 45-49 | 3 | 70-74 | 12 | 45-49 | 3 | 70-74 | 14 | 45-49 | 3 | | | | |
| 50-54 | 6 | 75-79 | 13 | 50-54 | 6 | 75-79 | 16 | 50-54 | 6 | | | | |
| Össz-koleszterin (mmol/l) | | Kor (év) | | | | | Össz-koleszterin (mmol/l) | | Kor (év) | | | | |
| | | 20-39 | 40-49 | 50-59 | 60-69 | 70-79 | | | 20-39 | 40-49 | 50-59 | 60-69 | 70-79 |
| <4,1 | 0 | 0 | 0 | 0 | 0 | 0 | <4,1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4,1-5,2 | 4 | 3 | 2 | 1 | 0 | 0 | 4,1-5,2 | 4 | 3 | 2 | 1 | 1 | 1 |
| 5,2-6,2 | 7 | 5 | 3 | 1 | 0 | 0 | 5,2-6,2 | 8 | 6 | 4 | 2 | 1 | 1 |
| 6,2-7,2 | 9 | 6 | 4 | 2 | 1 | 1 | 6,2-7,2 | 11 | 8 | 5 | 3 | 2 | 2 |
| ≥7,2 | 11 | 8 | 5 | 3 | 1 | 1 | ≥7,2 | 13 | 10 | 7 | 4 | 2 | 2 |
| Kor (év) | 20-39 | 40-49 | 50-59 | 60-69 | 70-79 | Kor (év) | 20-39 | 40-49 | 50-59 | 60-69 | 70-79 | | |
| Nem-dohányzó | 0 | 0 | 0 | 0 | 0 | Nem-dohányzó | 0 | 0 | 0 | 0 | 0 | | |
| Dohányzó | 8 | 5 | 3 | 1 | 1 | Dohányzó | 9 | 7 | 4 | 2 | 1 | | |
| HDL-Ch (mmol/l) | Pontok | HDL-Ch (mmol/l) | Pontok | HDL-Ch (mmol/l) | Pontok | HDL-Ch (mmol/l) | Pontok | HDL-Ch (mmol/l) | Pontok | HDL-Ch (mmol/l) | Pontok | | |
| ≥1,6 | -1 | 1,0-1,3 | 1 | ≥1,6 | -1 | 1,0-1,3 | 1 | | | | | | |
| 1,3-1,6 | 0 | <1,0 | 2 | 1,3-1,6 | 0 | <1,0 | 2 | | | | | | |
| Sziszt. RR (Hgmm) | Kezeletlen | Kezelt | Sziszt. RR (Hgmm) | Kezeletlen | Kezelt | | | | | | | | |
| <120 | 0 | 0 | <120 | 0 | 0 | | | | | | | | |
| 120-129 | 0 | 1 | 120-129 | 1 | 3 | | | | | | | | |
| 130-139 | 1 | 2 | 130-139 | 2 | 4 | | | | | | | | |
| 140-159 | 1 | 2 | 140-159 | 3 | 5 | | | | | | | | |
| ≥160 | 2 | 3 | ≥160 | 4 | 6 | | | | | | | | |
| Össz-pontszám | 10 éves rizikó | Össz-pontszám | 10 éves rizikó | Össz-pontszám | 10 éves rizikó | Össz-pontszám | 10 éves rizikó | | | | | | |
| <0 | <1% | 11 | 8% | <9 | <1% | 19 | 8% | | | | | | |
| 0-4 | 1% | 12 | 10% | 9-12 | 1% | 20 | 11% | | | | | | |
| 5-6 | 2% | 13 | 12% | 13-14 | 2% | 21 | 14% | | | | | | |
| 7 | 3% | 14 | 16% | 15 | 3% | 22 | 17% | | | | | | |
| 8 | 4% | 15 | 20% | 16 | 4% | 23 | 22% | | | | | | |
| 9 | 5% | 16 | 25% | 17 | 5% | 24 | 27% | | | | | | |
| 10 | 6% | ≥17 | ≥30% | 18 | 6% | ≥25 | ≥30% | | | | | | |

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- We use new equipment, BF 500 Body Composition Monitor:



- BF 500 Body Composition Monitor: we can measure **Body Fat percentage** and **Visceral Fat Level**, **Resting Metabolism** and **Skeletal muscle percentage**



OBSERVATION

EXAMINATION

- **84 pilot**
- Average age 47,1 év

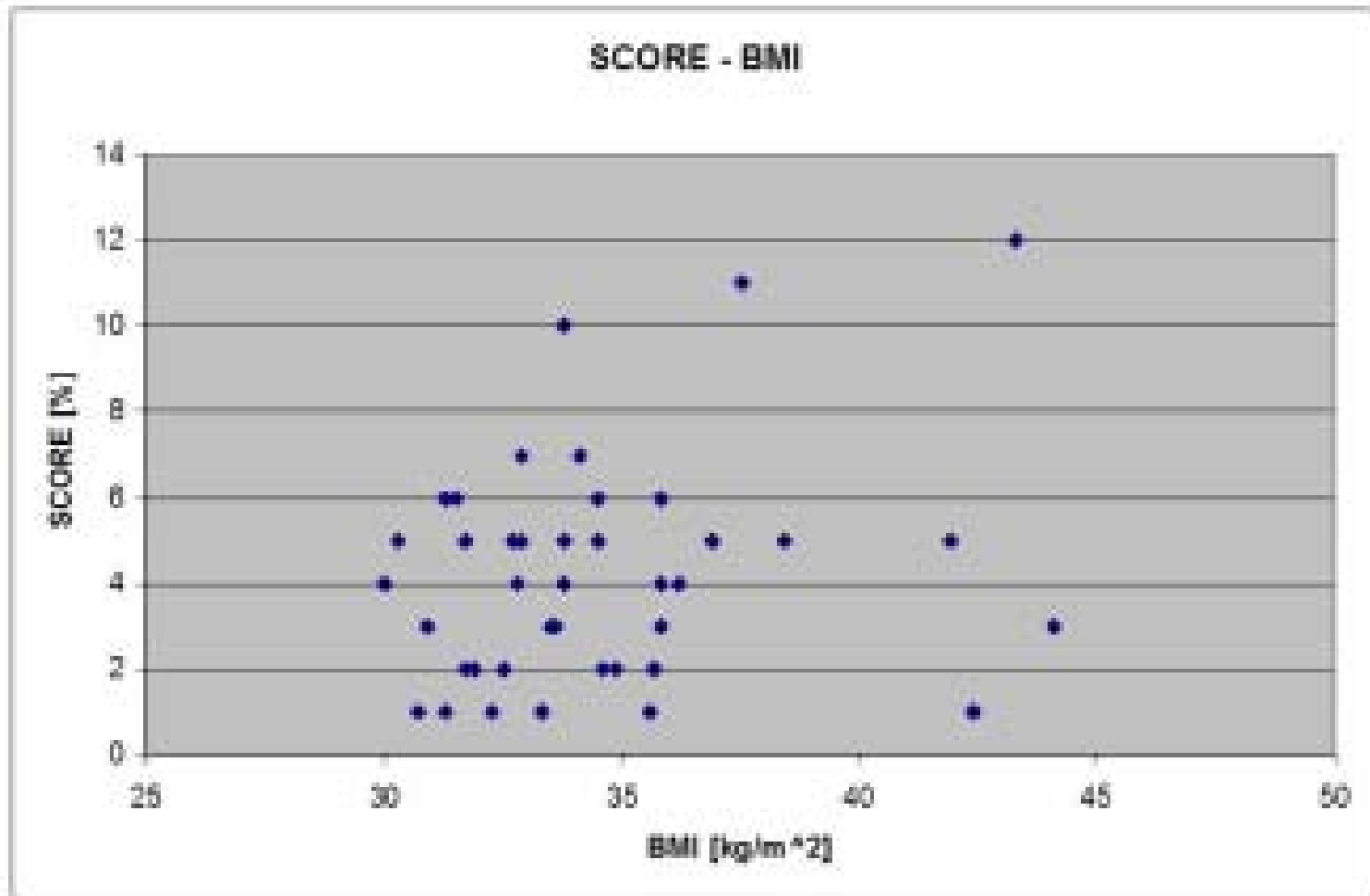
41 Obes pilot

Average age : 47,3 év
Average BMI: 34,47 kg/m²
Average SCORE: 4,14 %

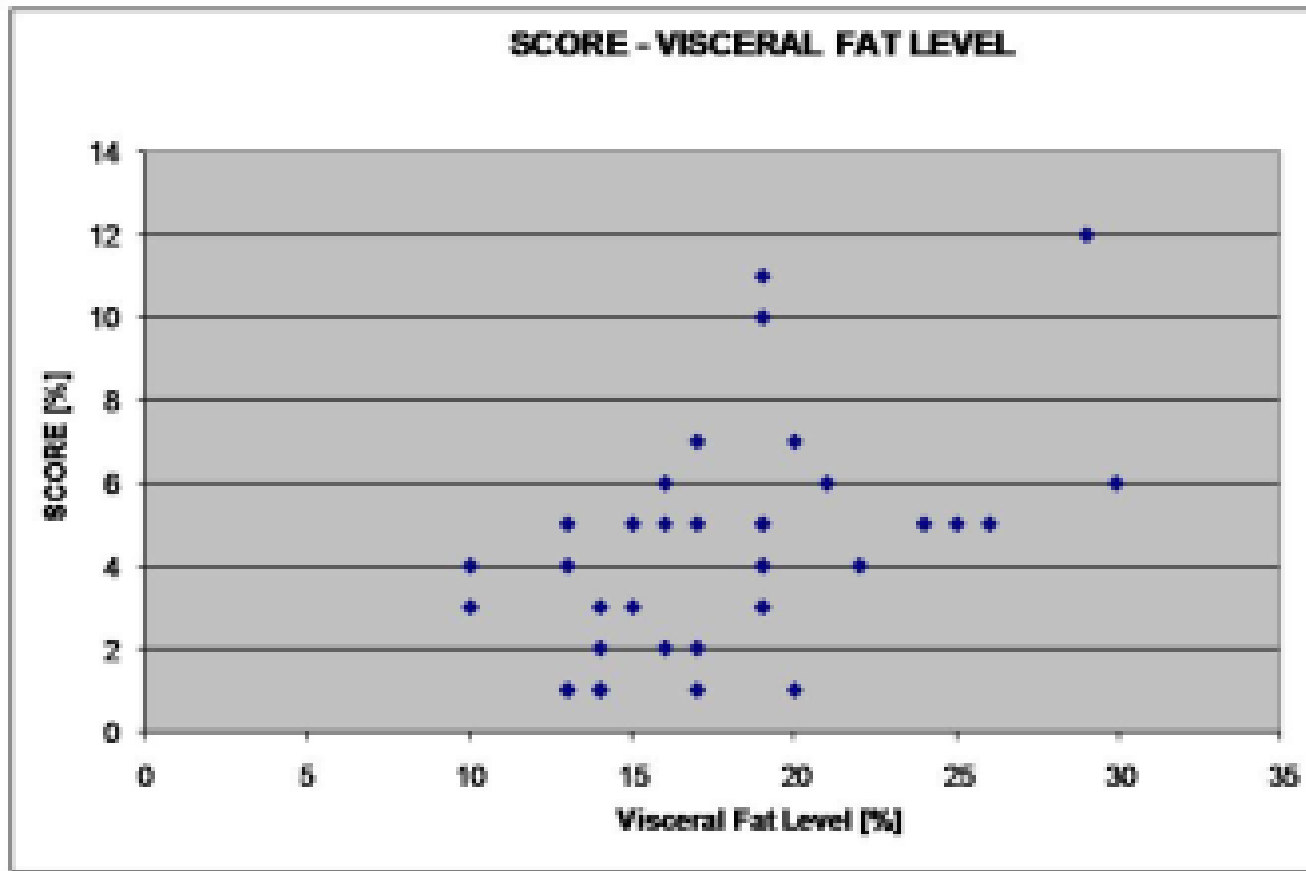
43 „Healthy” pilot

Average age : 39,9 év
Average BMI: 22,37 kg/m²
Average SCOR: 3,11 %

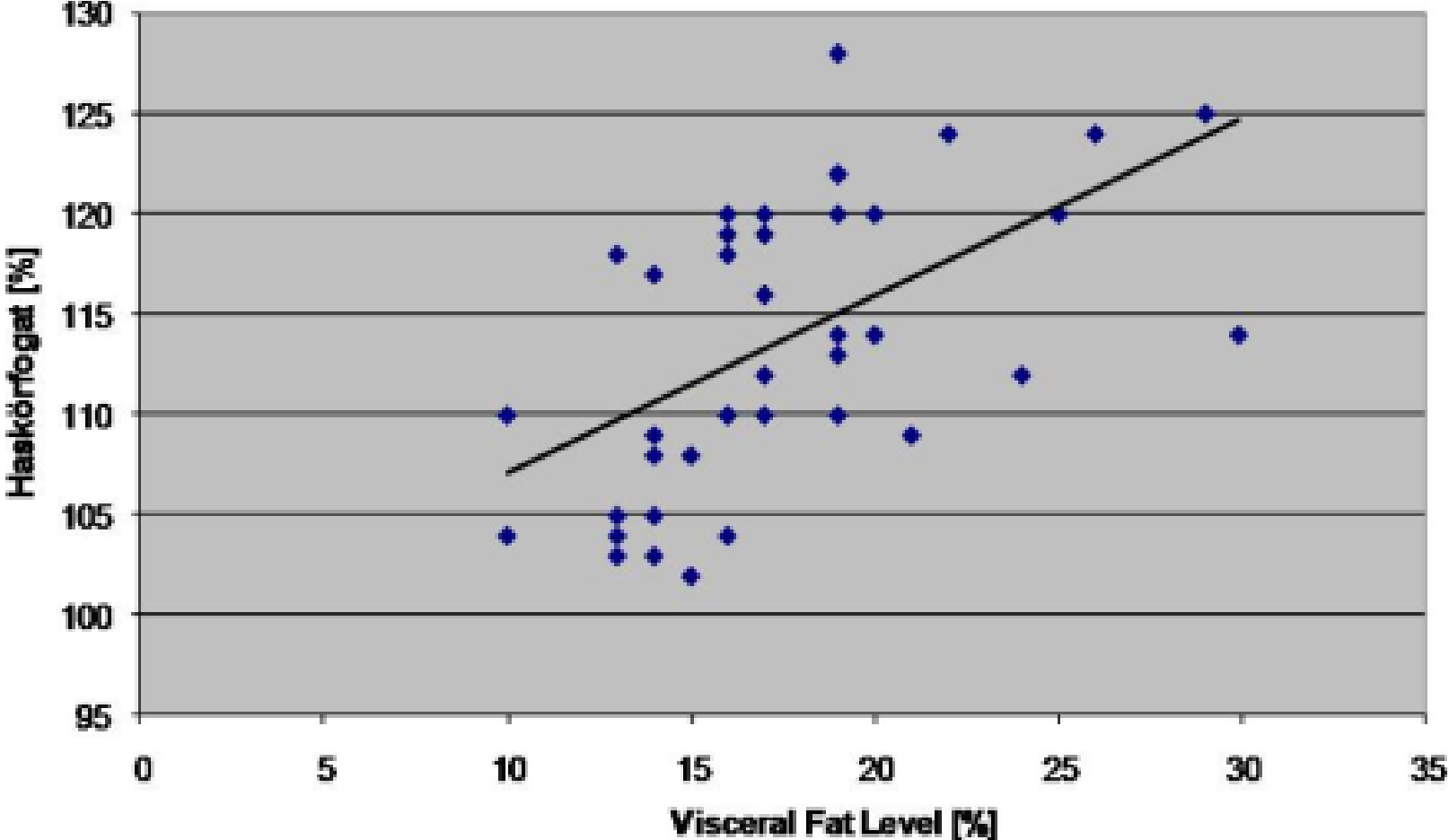
SCORE-BMI



SCORE-VISCERAL FAT LEVEL



SIZE of ABDOMEN - VISCERAL FAT LEVEL



CONCLUSIONS

1. Despite the divergence between the body weight and the BMI of the pilots of identical age, **the SCORE index did not indicate greater obesity related risk of cardio-vascular diseases.**
2. **The only correlation established between visceral fat – measured by Body Compositor Monitor – and size of the abdomen.**
3. **To define the correlation between cardiovascular risk and obesity we need a long term follow up. (up to 5 years)**