MILIFE – CASE STUDY

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The 18th Annual BHF Southern African Conference

Cape Town
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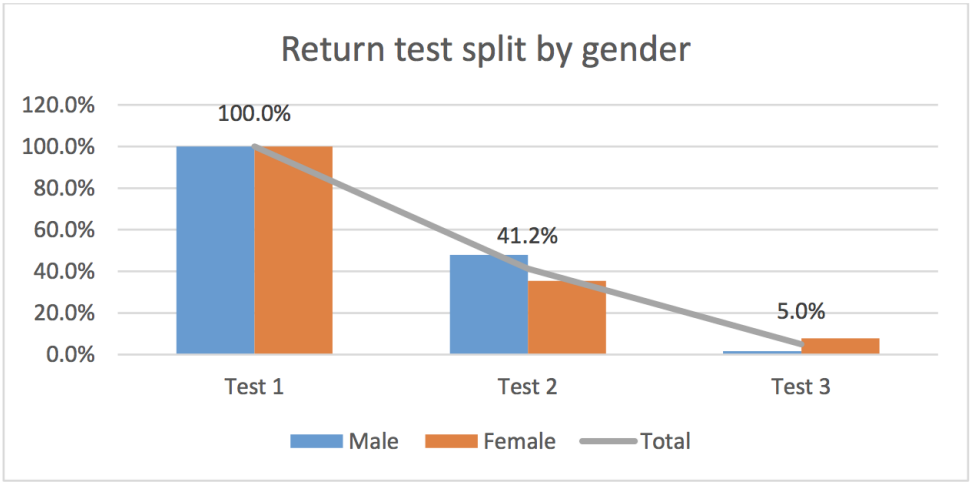
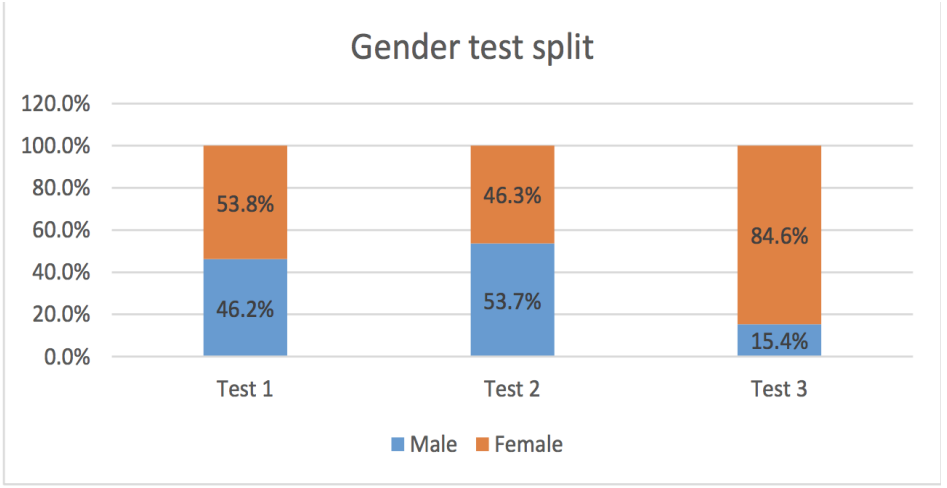
Test Phase 2016: Gender

- 265 individuals were selected to take part in a 3 month evaluation
- 54% female – 46% Male
- Individuals were to be tested twice or three times
- 41.2% came back for 2nd test (47% Male – 36% Female)
- 5% returned for a third time
- Female participants more likely to return than males

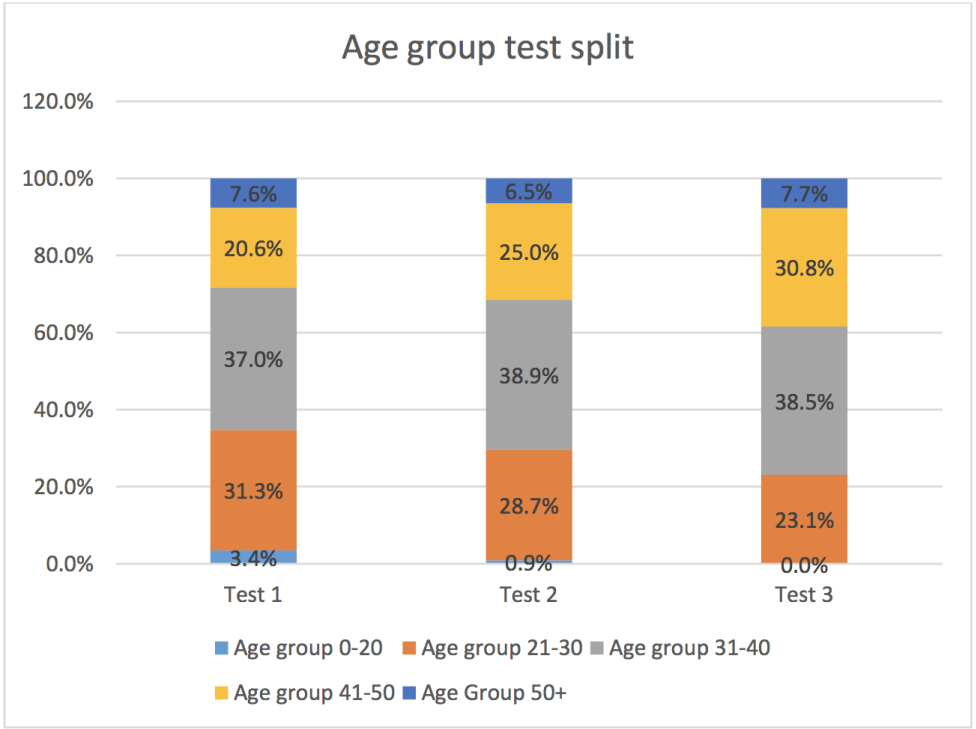
Gender Graphs:





Test Phase 2016: Age

- Test subjects representative across all age categories:



Data Analysis:

- The baseline tests that was conducted gave a good indication of the level of health of the average person. The subsequent tests conducted is indicative of how these have moved over time.
- Most significantly is the decrease in blood pressure and cholesterol. The slight increase in Glucose can be attributed to the test not being done under fasting conditions resulting in inconsistency

Average test performance								
	Mass (kg)	Lung Function	BP top	BP bottom	Cholesterol	Glucose	BMI	Fitness
Test 1	80.45	493.51	125.80	80.26	3.64	5.76	27.49	1.68
Test 2	82.28	510.74	123.69	79.85	3.44	5.88	27.74	1.89
Test 3	81.47	431.54	119.69	76.31	3.38	5.75	28.40	1.98

Data Analysis:

- Although female participants have lower blood pressure,mass and BMI, they have corresponding lower levels of fitness and lung function.
- Most notable difference between male and female participants is Body Composition.
- Upon comparing the changes from one test to the next we see that all measures showed improvement except glucose which remained fairly consistent. This could be due to the lack of a fasting test introducing testing condition inconsistencies.

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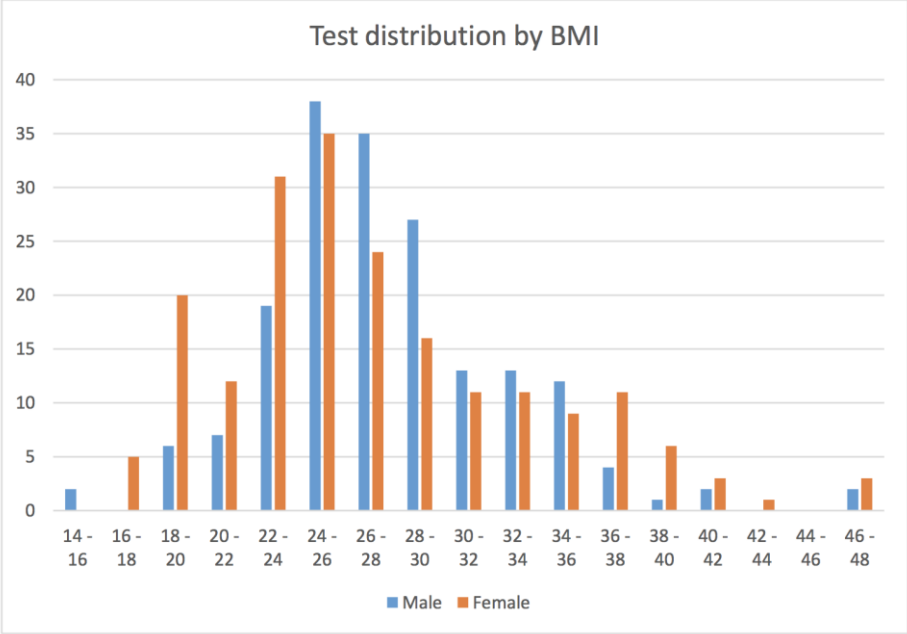
Overall Testing Analysis: BMI

- If we look at the norms for BMI in the table below and compare it with the distribution of the test data below we immediately observe that more than 60% of male tests and nearly 50% of female tests indicate high risk BMI levels. The correlation between this and high blood pressure is indicative of higher levels of health issues expected.

LMI/ BMI:							
Male Norms				Female Norms			
Age Ouderdom	Low Risk Lae risiko	Moderate risk Matige risiko	High risk Hoë risiko	Age Ouderdom	Low Risk Lae risiko	Moderate risk Matige risiko	High risk Hoë risiko
18-34	≤23.7	23.8-25.7	≥25.8	18-34	≤23.9	24.0-26.0	≥26.1
35-54	≤24.1	24.2-26.1	≥26.2	35-54	≤24.1	24.2-26.2	≥26.3
55-65	≤24.3	24.4-26.3	≥26.4	55-65	≤24.5	24.6-26.6	≥26.7

Test distribution by BMI

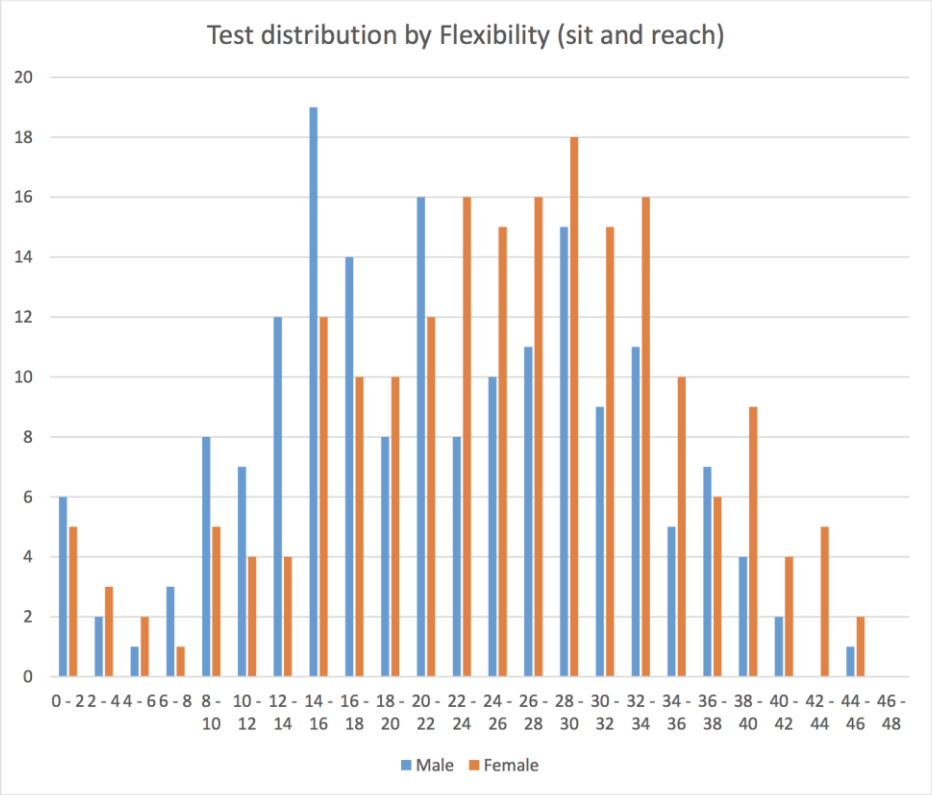


Overall Testing Analysis: Flexibility

Sit & Reik/ Sit & Reach:									
Male Norms					Female Norms				
Age Ouderdom	Vey Good Baie goed	Good Goed	Moderate Gemiddeld	Poor Swak	Age Ouderdom	Vey Good Baie goed	Good Goed	Moderate Gemiddeld	Poor Swak
18-34	≥49	41-48	30-40	≤29	**18-34**	≥52	43-51	33-42	≤32
35-44	≥48	40-47	29-39	≤28	**35-44**	≥50	41-49	31-40	≤30
45-54	≥46	38-45	27-37	≤26	**45-54**	≥48	39-47	29-38	≤28
55-65	≥44	36-43	225-35	≤24	**55-65**	≥46	37-45	27-36	≤26

- When observing the flexibility levels of test data we see that 69.8% of male tests and 62% of female tests indicated poor flexibility levels. This is indicative of participants not engaging in stretching exercises which can lead to other posture and movement related health issues in the future.

Test distribution by Flexibility (sit and reach)



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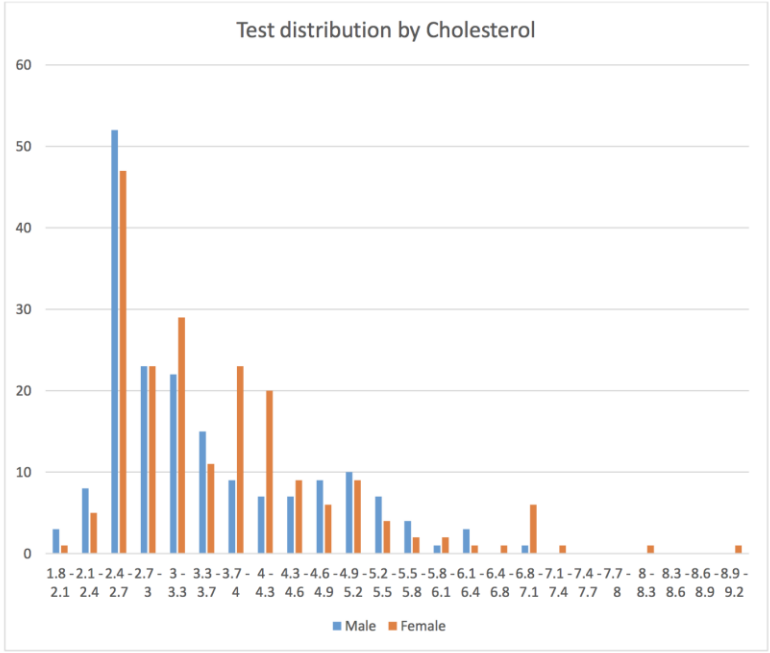
Overall Testing Analysis: Cholesterol

- Surprisingly the tests indicated that 87.5% of males and 87.6% of females have a low risk of health issues arising from cholesterol levels. This is consistent with the notion that glucose levels introduce more health issues.



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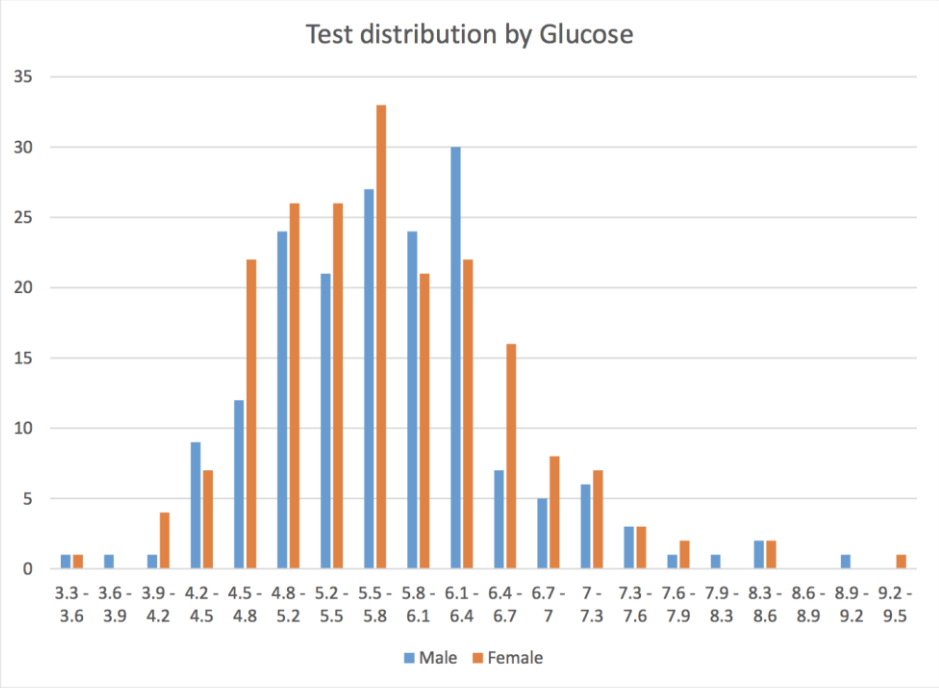
Overall Testing Analysis: Glucose

- Based on the norms we observe that more than two third of tests indicate moderate to high risk of diabetes. This is true for both genders.



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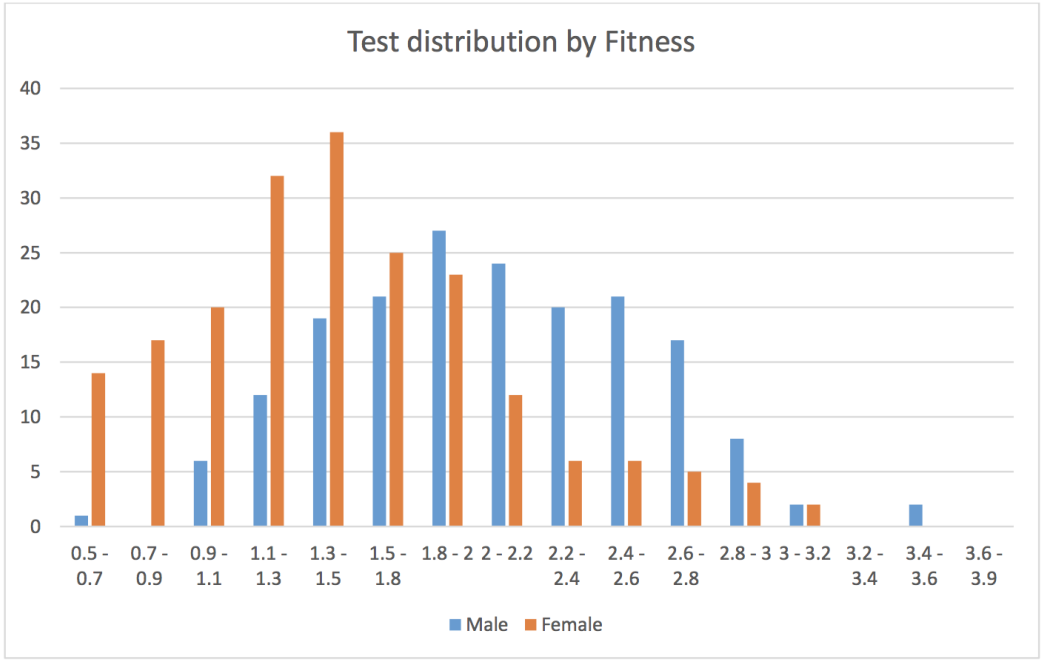
Overall Testing Analysis: Fitness

- In terms of the overall fitness of test subjects we see that more than 30% of men, and 40% of females have poor fitness levels. It is expected that through the link identified with blood pressure, this will lead to higher levels of health issues.



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Correlation Analysis

- A correlation analysis was done on the test output data in order to identify the linkages between the various elements.
- The correlations indicate a strong relationship between BMI/mass, age, blood pressure and fitness. It is expected that as individuals age they will increasingly start experiencing blood pressure and weight problems. The key to curb this will be through increased fitness levels.
- Glucose levels is also strongly correlated with age and blood pressure. These are major contributors towards lifestyle diseases.
- It is surprising to note the strong correlation between length, fitness and lung function. As taller individuals have better lung function and fitness they are expected to have lower morbidity rates. Further analysis on life expectancy might reveal interesting results.
- When analysing the correlation between the various elements over the test period we observe that fitness is negatively correlated with all the other measures, thus reaffirming the benefits of members to gain fitness.

Test subject improvement

- 74% of test subjects improved over a 3 month period
- Highest improvement was 19.90 % (Obese individual lost 19kg's and improved fitness dramatically)
- Average improvement for return test subjects was 11%
- Age Group 41-50 showed highest average improvement
- This is a very positive trend as individuals in this age group run a higher risk of lifestyle related diseases.

MEASURED HEALTH REBATE PROGRAMME

WITH BENEFITS & REWARDS

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Program Implementation:

- Development of a scoring system for Milife Members
- To Score and track improvements
- Encouragement and Points
- Monetary incentive
- Annual Prizes

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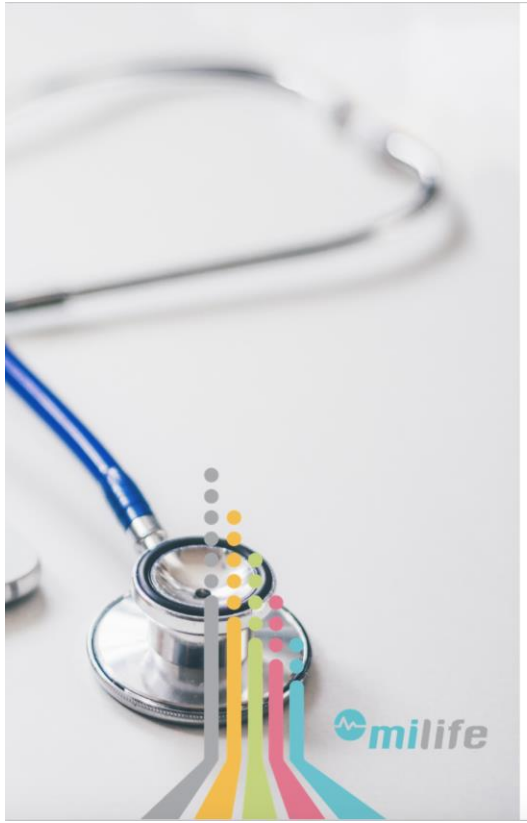

8 HEALTH ASSESSMENTS OVER 24 MONTHS

- FITNESS TEST
- BMI
- STRESS ECG
- FAT PERCENTAGE
- BLOOD GLUCOSE
- BLOOD PRESSURE
- BLOOD CHOLESTEROL
- LUNG FUNCTION
- MOBILITY TEST
- IN BODY TEST

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CV Risk Score

Total Cholesterol	Male		Female	
< 4.1	0		0	
4.1 - 4.5	1		1	
5.2 - 6.2	2		3	
6.2 - 7.2	3		4	
> 7.2	4		5	
Systolic BP	Male no treatment	Male on treatment	Female no treatment	Female on treatment
< 120	-2	0	-3	-1
120 - 129	0	2	0	2
130 - 139	1	3	1	3
140 - 149	2	4	2	5
150 - 159	2	4	4	6
> 160	3	5	5	7
Diabetes fasting HGT < 7	Male		Female	
Yes	3		4	
No	0		0	
Smoker	Male		Female	
Yes	4		3	
No	0		0	

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Healthy Norms

Healthy Norms

Levels		0	10	20	30	40	50	60	70	80	90	100
30% CV risk (BP, Glucose, Cholesterol)		≥ 21	18 - 20	15 - 17	12 - 14	9 - 11	6 - 8	4 - 5	1 - 3	0 - -2	≥ -3	≥ -3
30% Fitness (resting HR, Time, Recover)	Male	< 1	1 - 1.3	1.4 - 1.6	1.7 - 1.9	2.0 - 2.2	2.3 - 2.5	2.6 - 2.8	2.9 - 3.1	3.2 - 3.5	3.6 - 4.0	> 4
30% Fitness (resting HR, Time, Recover)	Female	< 1	1.1	1.2	1.3	1.4	1.5 - 1.8	1.9	2	2.1 - 2.5	2.6 - 2.9	> 3
30% Fat % (BMI, FM, LM)	Male	≥ 35%	30-34.9%	27-29.9%	24-26.9%	21-23.9%	15-20.9%	12-14.9%	10-11.9%	8-9.9%	5-7.9%	< 5
30% Fat % (BMI, FM, LM)	Female	≥ 45%	40-44.9%	37-39.9%	30-36.9%	26-29.9%	20-25.9%	17-19.9%	14-16.9%	12-13.9%	10-11.9%	< 10
10% Age		16 - 20	21 - 25	26 - 30	31 - 35	36 - 40	41 - 45	46 - 50	51 - 55	56 - 60	61 - 65	≥ 66

Healthy Norms

- Testing must be conducted every 3 months
- Scoring below 5
- Scoring above 5
- Improvement vs Maintenance
- Incentivising the Improvers AND the maintainers
- Why a device doesn't work

Key Aspects to consider: (Why I Believe it)

- Education is your friend – Story of Achiem
- The bigger the girl – the healthier she is !
- My Medical Aid card is also known as my Medical Credit Card
- For you to earn a REBATE you must Improve!
- Get KIDS on as soon as possible – catch them YOUNG.
- You cannot out-train a BAD diet – why dietary education is important.
- Why a Medical Aid MUST go this route.

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HEALTHY & ACTIVE LIFESTYLES

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Conclusion:

- The analysis of our case study that was performed highlighted that the largest contributor to living a healthy lifestyle is to manage blood pressure and glucose levels. The correlation that exist between these measures, fitness and BMI highlights importance of managing weight and fitness levels.

- It is therefore expected that a program such as Milife will result in a decrease and/or eradication of lifestyle diseases over time.

- It should be noted though that although there is an expectation of a 60%-80% decrease in incidence, this will only translate in the cases where participants continue to stay on the managed program.

- In terms of the cost benefit of rewarding individuals, it is expected that the cost saving from healthier members translating into lower claims over an extended period will outweigh the cost of rewarding improved members. The exact cost-benefit level will be dependent on the reward offered in conjunction with medical inflation over time.

Conclusion:

- When implementing Milife it's important to keep it simple.
- Set achievable goals to reap long lasting results.

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THANK YOU

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