

Lampiran

DATA HASIL TES TREADMILL

| No | Nama | Umur (Th) | Tinggi badan (cm) | Berat badan (kg) | Treadmill | | VO2 maks | Waktu Mnt | BMI | Kategori |
|----|------|-----------|-------------------|------------------|-----------|----------|----------|-----------|----------|-----------|
| | | | | | HR awal | HR akhir | | | | |
| 1 | Spr | 22 | 171 | 59 | 71 | 188 | 34.48 | 13.30 | 0.002018 | Kurang |
| 2 | Dn | 22 | 170 | 63 | 72 | 186 | 29.91 | 10.20 | 0.00218 | Sngt krng |
| 3 | Ddk | 22 | 171 | 60 | 76 | 185 | 29.31 | 9.55 | 0.002052 | Sngt krng |
| 4 | Fhm | 23 | 165 | 63 | 75 | 190 | 28.11 | 9.05 | 0.002314 | Sngt krng |
| 5 | Uj | 21 | 172 | 64 | 74 | 174 | 35.45 | 14.10 | 0.002163 | Kurang |
| 6 | Kk | 21 | 171 | 60 | 76 | 185 | 30.75 | 10.55 | 0.002052 | Sngt krng |
| 7 | Ind | 21 | 165 | 58 | 75 | 179 | 29.38 | 9.58 | 0.00213 | Sngt krng |
| 8 | Mk | 21 | 166 | 64 | 75 | 194 | 30.52 | 9.52 | 0.002323 | Sngt krng |
| 9 | Vnc | 22 | 172 | 60 | 68 | 180 | 29.19 | 9.50 | 0.002028 | Sngt krng |
| 10 | Vdl | 21 | 167 | 60 | 73 | 197 | 31.60 | 11.30 | 0.002151 | Sngt krng |
| 11 | Dms | 21 | 165 | 63 | 75 | 180 | 29.07 | 9.45 | 0.002314 | Sngt krng |
| 12 | Ryn | 22 | 169 | 62 | 75 | 189 | 29.91 | 10.20 | 0.002171 | Sngt krng |
| 13 | Fr | 22 | 170 | 63 | 74 | 184 | 30.75 | 10.55 | 0.00218 | Sngt krng |
| 14 | | | | | | | | | | |

Lampiran

DATA HASIL TES ERGOCYCLE

| No | Nama | Umur (Th) | Tinggi badan (cm) | Berat badan (kg) | Ergocycle | | VO ₂ maks | BMI | Watt | Kategori |
|----|------|-----------|-------------------|------------------|-----------|----------|----------------------|----------|------|----------|
| | | | | | HR awal | HR akhir | | | | |
| 1 | Spr | 22 | 171 | 59 | 74 | 131 | 49.33 | 0.002018 | 85 | Baik |
| 2 | Dn | 22 | 170 | 63 | 70 | 110 | 62.23 | 0.00218 | 75 | Baik skl |
| 3 | Ddk | 22 | 171 | 60 | 71 | 120 | 56.82 | 0.002052 | 80 | Baik skl |
| 4 | Fhm | 23 | 165 | 63 | 71 | 110 | 62.23 | 0.002314 | 75 | Baik skl |
| 5 | Uj | 21 | 172 | 64 | 75 | 169 | 53.89 | 0.002163 | 75 | Baik skl |
| 6 | Kk | 21 | 171 | 60 | 78 | 145 | 39.52 | 0.002052 | 90 | Cukup |
| 7 | Ind | 21 | 165 | 58 | 74 | 139 | 45.13 | 0.00213 | 90 | Baik |
| 8 | Mk | 21 | 166 | 64 | 76 | 171 | 24.15 | 0.002323 | 85 | Kurang |
| 9 | Vnc | 22 | 172 | 60 | 76 | 132 | 47.70 | 0.002028 | 85 | Baik |
| 10 | Vdl | 21 | 167 | 60 | 76 | 134 | 46.12 | 0.002151 | 90 | Baik |
| 11 | Dms | 21 | 165 | 63 | 78 | 148 | 35.85 | 0.002314 | 85 | Cukup |
| 12 | Ryn | 22 | 169 | 62 | 75 | 134 | 39.02 | 0.002171 | 85 | Cukup |
| 13 | Fr | 22 | 170 | 63 | 78 | 113 | 37.77 | 0.00218 | 85 | Cukup |

Lampiran

DATA HASIL TES LARI 12 MENIT

| No | Nama | Umur (Th) | Tinggi badan (cm) | Berat badan (kg) | Lari 12 mnt | | Jarak (M) | BMI | Vo2 Maks | Kategori |
|----|------|-----------|-------------------|------------------|-------------|----------|-----------|----------|----------|----------|
| | | | | | HR awal | HR akhir | | | | |
| 1 | Spr | 22 | 171 | 59 | 76 | 156 | 2450 | 0.002018 | 42.5 | Baik |
| 2 | Dn | 22 | 170 | 63 | 76 | 153 | 2450 | 0.00218 | 42.5 | Baik |
| 3 | Ddk | 22 | 171 | 60 | 74 | 144 | 2450 | 0.002052 | 42.5 | Baik |
| 4 | Fhm | 23 | 165 | 63 | 73 | 160 | 2000 | 0.002314 | 36.0 | Cukup |
| 5 | Uj | 21 | 172 | 64 | 74 | 169 | 2370 | 0.002163 | 42.0 | Cukup |
| 6 | Kk | 21 | 171 | 60 | 78 | 150 | 2050 | 0.002052 | 37.0 | Cukup |
| 7 | Ind | 21 | 165 | 58 | 75 | 135 | 2200 | 0.00213 | 41.5 | Cukup |
| 8 | Mk | 21 | 166 | 64 | 76 | 173 | 2360 | 0.002323 | 42.4 | Cukup |
| 9 | Vnc | 22 | 172 | 60 | 73 | 135 | 2050 | 0.002028 | 37.0 | Cukup |
| 10 | Vdl | 21 | 167 | 60 | 65 | 155 | 2650 | 0.002151 | 46.5 | Baik skl |
| 11 | Dms | 21 | 165 | 63 | 73 | 165 | 2320 | 0.002314 | 42.2 | Cukup |
| 12 | Ryn | 22 | 169 | 62 | 79 | 176 | 2650 | 0.002171 | 46.5 | Baik skl |
| 13 | Fr | 22 | 170 | 63 | 72 | 157 | 2650 | 0.00218 | 46.5 | Baik skl |

Lampiran

Tingkat kebugaran responden berdasarkan hasil pengukuran VO₂ maks memakai alat

Treadmill, Ergocycle dan tes lari 12 menit.

| No | Nama | Umur (Th) | Treadmiii | Ergocycle | Lari 12 mnt |
|----|------|--------------|-----------|-----------|-------------|
| | | | Kategori | Kategori | Kategori |
| 1 | Spr | 22 | Kurang | Baik | Baik |
| 2 | Dn | 22 | Sngt krng | Baik skl | Baik |
| 3 | Ddk | 22 | Sngt krng | Baik skl | Baik |
| 4 | Fhm | 23 | Sngt krng | Baik skl | Cukup |
| 5 | Uj | 21 | Kurang | Baik skl | Cukup |
| 6 | Kk | 21 | Sngt krng | Cukup | Cukup |
| 7 | Ind | 21 | Sngt krng | Baik | Cukup |
| 8 | Mk | 21 | Sngt krng | Kurang | Cukup |
| 9 | Vnc | 22 | Sngt krng | Baik | Cukup |
| 10 | Vdl | 21 | Sngt krng | Baik | Baik skl |
| 11 | Dms | 21 | Sngt krng | Cukup | Cukup |
| 12 | Ryn | 22 | Sngt krng | Cukup | Baik skl |
| 13 | Fr | 22 | Sngt krng | Cukup | Baik skl |

Lampiran Hasil Analisis Statistik

Case Summaries

| | Umur | TB | BB | BMI |
|----------------|---------|----------|---------|---------|
| N | 13 | 13 | 13 | 13 |
| Mean | 21,3846 | 168,7692 | 61,4615 | 21,5970 |
| Std. Deviation | ,96077 | 2,77350 | 2,02548 | 1,06754 |
| Minimum | 20,00 | 165,00 | 58,00 | 20,18 |
| Maximum | 23,00 | 172,00 | 64,00 | 23,23 |

NPar Tests

One-Sample Kolmogorov-Smirnov Test

| | | Nadi awal Treadmill | Nadi awal Ergocycle | Nadi awal Lari |
|----------------------------------|----------------|---------------------|---------------------|----------------|
| N | | 13 | 13 | 13 |
| Normal Parameters ^{a,b} | Mean | 86,4615 | 90,2308 | 77,5385 |
| | Std. Deviation | 2,84650 | 7,87564 | 6,82661 |
| Most Extreme Differences | Absolute | ,334 | ,181 | ,132 |
| | Positive | ,334 | ,127 | ,132 |
| | Negative | -,194 | -,181 | -,132 |
| Kolmogorov-Smirnov Z | | 1,203 | ,651 | ,475 |
| Asymp. Sig. (2-tailed) | | ,111 | ,790 | ,978 |

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|---------------------|---------|----|----------------|-----------------|
| Pair 1 | Nadi awal Treadmill | 86,4615 | 13 | 2,84650 | ,78948 |
| | Nadi awal Ergocycle | 90,2308 | 13 | 7,87564 | 2,18431 |
| Pair 2 | Nadi awal Treadmill | 86,4615 | 13 | 2,84650 | ,78948 |
| | Nadi awal Lari | 77,5385 | 13 | 6,82661 | 1,89336 |
| Pair 3 | Nadi awal Ergocycle | 90,2308 | 13 | 7,87564 | 2,18431 |
| | Nadi awal Lari | 77,5385 | 13 | 6,82661 | 1,89336 |

Paired Samples Test

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|--------|---|--------------------|----------------|-----------------|---|----------|--------|----|-----------------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | Nadi awal Treadmill - Nadi awal Ergocycle | -3,76923 | 9,85016 | 2,73194 | -9,72162 | 2,18316 | -1,380 | 12 | ,193 |
| Pair 2 | Nadi awal Treadmill - Nadi awal Lari | 8,92308 | 6,62648 | 1,83786 | 4,91873 | 12,92742 | 4,855 | 12 | ,000 |
| Pair 3 | Nadi awal Ergocycle - Nadi awal Lari | 12,69231 | 11,77840 | 3,26674 | 5,57489 | 19,80993 | 3,885 | 12 | ,002 |

NPar Tests

One-Sample Kolmogorov-Smirnov Test

| | | Nadi akhirTreadmill | Nadi akhir Ergocycle | Nadi akhir Lari |
|----------------------------------|----------------|---------------------|----------------------|-----------------|
| N | | 13 | 13 | 13 |
| Normal Parameters ^{a,b} | Mean | 185,4615 | 115,6154 | 156,0000 |
| | Std. Deviation | 6,33266 | 11,90615 | 13,00000 |
| Most Extreme Differences | Absolute | ,113 | ,220 | ,101 |
| | Positive | ,113 | ,220 | ,101 |
| | Negative | -,101 | -,133 | -,101 |
| Kolmogorov-Smirnov Z | | ,409 | ,793 | ,364 |
| Asymp. Sig. (2-tailed) | | ,996 | ,556 | ,999 |

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|--|----------|----|----------------|-----------------|
| Pair 1 | Nadi akhirTreadmill - Nadi akhir Ergocycle | 185,4615 | 13 | 6,33266 | 1,75636 |
| Pair 2 | Nadi akhirTreadmill - Nadi akhir Lari | 185,4615 | 13 | 6,33266 | 1,75636 |
| Pair 3 | Nadi akhir Ergocycle - Nadi akhir Lari | 115,6154 | 13 | 11,90615 | 3,30217 |

Paired Samples Test

| | | Paired Differences | | | | t | df | Sig. (2-tailed) | |
|--------|--|--------------------|----------------|-----------------|---|-----------|--------|-----------------|------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | Nadi akhirTreadmill - Nadi akhir Ergocycle | 69,84615 | 16,10821 | 4,46761 | 60,11206 | 79,58025 | 15,634 | 12 | ,000 |
| Pair 2 | Nadi akhirTreadmill - Nadi akhir Lari | 29,46154 | 12,74503 | 3,53484 | 21,75979 | 37,16329 | 8,335 | 12 | ,000 |
| Pair 3 | Nadi akhir Ergocycle - Nadi akhir Lari | -40,38462 | 23,08874 | 6,40366 | -54,33700 | -26,43223 | -6,306 | 12 | ,000 |

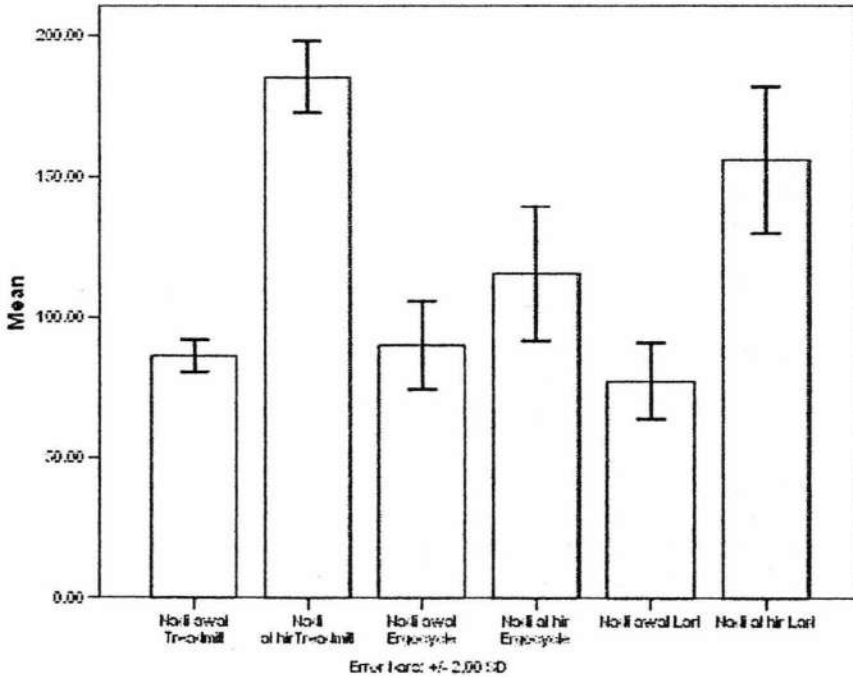
T-Test

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|--|----------|----|----------------|-----------------|
| Pair 1 | Nadi akhirTreadmill - Nadi awal Treadmill | 185,4615 | 13 | 6,33266 | 1,75636 |
| Pair 2 | Nadi akhir Ergocycle - Nadi awal Ergocycle | 115,6154 | 13 | 11,90615 | 3,30217 |
| Pair 3 | Nadi akhir Lari - Nadi awal Lari | 156,0000 | 13 | 13,00000 | 3,60555 |

Paired Samples Test

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|--------|--|--------------------|----------------|-----------------|---|-----------|--------|----|-----------------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | Nadi akhir Treadmill - Nadi awal Treadmill | 99,00000 | 7,41620 | 2,05688 | 94,51844 | 103,48156 | 48,131 | 12 | ,000 |
| Pair 2 | Nadi akhir Ergocycle - Nadi awal Ergocycle | 25,38462 | 14,79042 | 4,10212 | 16,44686 | 34,32237 | 6,188 | 12 | ,000 |
| Pair 3 | Nadi akhir Lari - Nadi awal Lari | 78,46154 | 15,74598 | 4,36715 | 68,94634 | 87,97674 | 17,966 | 12 | ,000 |



NPar Tests

One-Sample Kolmogorov-Smirnov Test

| | | VO2 max Treadmill | VO2 max Ergocycle | VO2 max Lari |
|----------------------------------|----------------|-------------------|-------------------|--------------|
| N | | 13 | 13 | 13 |
| Normal Parameters ^{a,b} | Mean | 30,6485 | 48,9300 | 41,4162 |
| | Std. Deviation | 2,12586 | 13,53150 | 5,10376 |
| Most Extreme Differences | Absolute | ,250 | ,104 | ,142 |
| | Positive | ,250 | ,104 | ,142 |
| | Negative | -,152 | -,090 | -,131 |
| Kolmogorov-Smirnov Z | | ,902 | ,374 | ,511 |
| Asymp. Sig. (2-tailed) | | ,390 | ,999 | ,956 |

a. Test distribution is Normal.

b. Calculated from data.

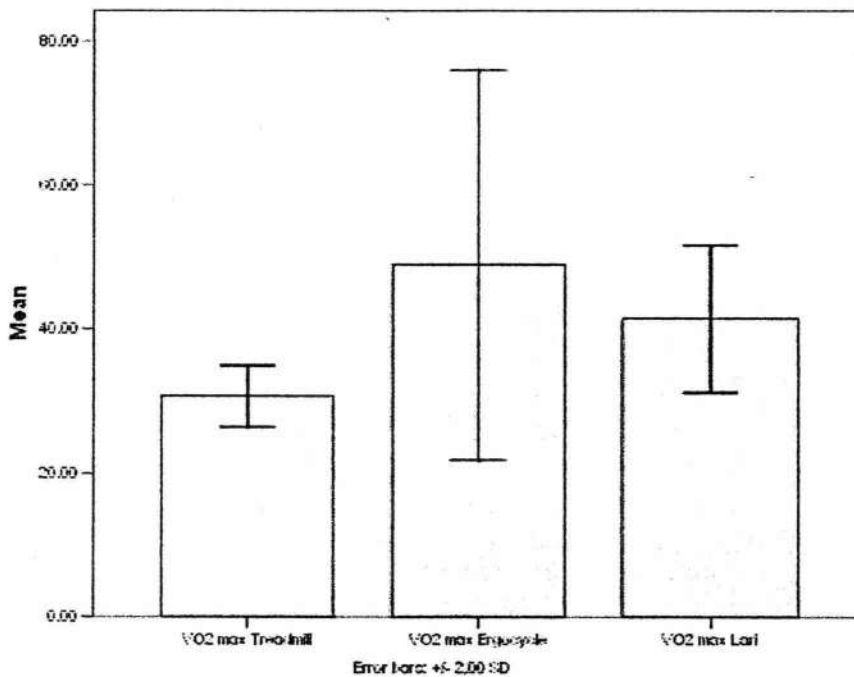
T-Test

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|---------------------------------------|---------|----|----------------|-----------------|
| Pair 1 | VO2 max Treadmill - VO2 max Ergocycle | 30,6485 | 13 | 2,12586 | ,58961 |
| Pair 2 | VO2 max Treadmill - VO2 max Lari | 48,9300 | 13 | 13,53150 | 3,75296 |
| Pair 3 | VO2 max Ergocycle - VO2 max Lari | 30,6485 | 13 | 2,12586 | ,58961 |
| | | 41,4162 | 13 | 5,10376 | 1,41553 |
| | | 48,9300 | 13 | 13,53150 | 3,75296 |
| | | 41,4162 | 13 | 5,10376 | 1,41553 |

Paired Samples Test

| | | Paired Differences | | | | t | df | Sig. (2-tailed) | |
|--------|---------------------------------------|--------------------|----------------|-----------------|---|-----------|--------|-----------------|-------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | | | | Upper |
| Pair 1 | VO2 max Treadmill - VO2 max Ergocycle | -18,28154 | 13,64937 | 3,78565 | -26,52977 | -10,03331 | -4,829 | 12 | ,000 |
| Pair 2 | VO2 max Treadmill - VO2 max Lari | -10,76769 | 4,84742 | 1,34443 | -13,69696 | -7,83843 | -8,009 | 12 | ,000 |
| Pair 3 | VO2 max Ergocycle - VO2 max Lari | 7,51385 | 16,45638 | 4,56418 | -2,43065 | 17,45834 | 1,646 | 12 | ,126 |



INFORMED CONSENT

DEPARTEMEN PENDIDIKAN NASIONAL
UNIVERSITAS AIRLANGGA
PROGRAM PASCASARJANA PENDIDIKAN MAGISTER
SURABAYA

SURAT PERSETUJUAN PESERTA PENELITIAN

Saya yang bertanda tangan dibawah ini :

Nama :

Umur :

Alamat / no telepon :

Setelah mendapat penjelasan secukupnya tentang faedah dan juga akibat-akibat yang mungkin terjadi, saya bersedia ikut dalam penelitian ini dan menyatakan tidak keberatan melakukan aktivitas fisik lari 12 menit, tes ergocycle dan tes treadmill.

Peneliti

Surabaya, September 2011

Yang memberi pernyataan

(Bayu Afriyanto, S.Pd)

(.....)

Saksi 1

Saksi 2

(.....)

(.....)

Lampiran

PENJELASAN DAN INFORMASI PENELITIAN

(Information for Consent)

Tujuan dari penelitian ini adalah untuk mengetahui hasil membandingkan tes VO₂ maks lari 12 menit (Cooper) dengan ergocycle (Astrand) dan treadmill (Astrand).

Manfaat dari penelitian ini antara lain memberikan dasar informasi ilmiah tentang hasil tes kebugaran lari 12 menit dari (Cooper) dengan ergocycle (Astrand) dan treadmill (Astrand). Sebagai acuan para pelatih olahraga maupun pemerhati olahraga untuk pengukuran VO₂ maks pada atlet berbagai cabang olahraga. Sebagai masukan bagi subjek penelitian tentang kondisi fisiknya saat ini. Sebagai acuan untuk penelitian selanjutnya.

Setiap orang yang dilibatkan penelitian (Subjek penelitian) akan melakukan latihan fisik secara maksimal (olahraga) sesuai prosedur yang diinstruksikan.

Data saudara sebagai subjek penelitian yang dilibatkan dalam penelitian bersifat rahasia dan akan diolah secara ilmiah.

Pemberi Penjelasan

Penerima Penjelasan

(Bayu Afriyanto)

(.....)

Dokumentasi Penelitian :

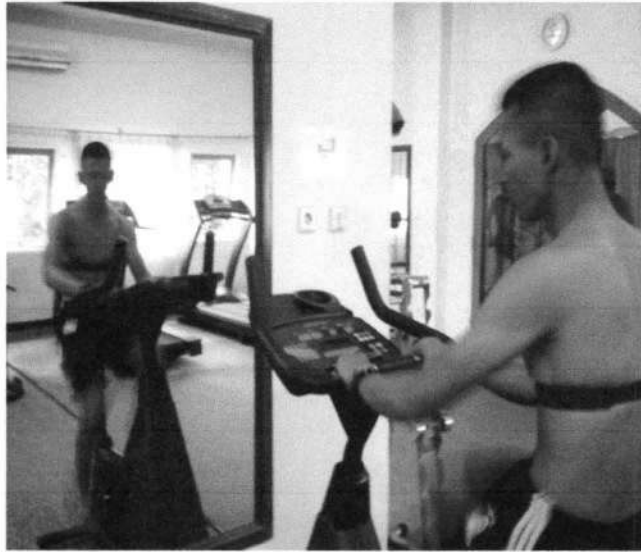
Pengukuran berat badan



Tes Treadmill



Tes Ergocycle



Tes Lari 12 menit



Perlengkapan : Polar, jam digital, stopwatch





**KOMITE ETIK PENELITIAN KESEHATAN
FAKULTAS KEDOKTERAN UNIVERSITAS AIRLANGGA
SURABAYA**

**KETERANGAN KELAIKAN ETIK
("ETHICAL CLEARANCE")**

No. 042/EC/KEPK/FKUA/2011

KOMITE ETIK PENELITIAN KESEHATAN FAKULTAS KEDOKTERAN UNIVERSITAS AIRLANGGA SURABAYA, TELAH MEMPELAJARI SECARA SEKSAMA RANCANGAN PENELITIAN YANG DIUSULKAN, MAKA DENGAN INI MENYATAKAN BAHWA PENELITIAN BERJUDUL :

Membandingkan Hasil VO₂ Maks Antara Tes Lari 12 Menit (Cooper), Ergocycle (Astrand) dan Treadmill (Astrand)

PENELITI UTAMA :

Bayu Afriyanto

UNIT / LEMBAGA / TEMPAT PENELITIAN :

Pusat Kebugaran Jasmani Akademi Angkatan Laut, dan
Stadion Jala Krida Mandala AAL Surabaya

DINYATAKAN LAIK ETIK.



28 September 2011

M. Sajid Darmadipura
Prof. M. Sajid Darmadipura, dr., SpS, SpBS