Supplementary Table 1. Sperm concentration (million/mil) reported by participating technicians on ten samples.

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| --- | --- |
| **Technician** | **Samples** |
| **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **I** | **J** |
| **1** | 10.7 | 44.8 | 28.8 | 39.1 | 35.0 | 41.6 | 44.6 | 18.6 | 132.0 | 40.3 |
|  **2** | 6.1 | 31.0 | 20.0 | 28.0 | 23.0 | 32.0 | 39.0 | 17.0 | 75.0 | 25.0 |
| **3** | 10.9 | 53.4 | 35.1 | 40.9 | 40.3 | 37.0 | 44.3 | 20.5 | 134.0 | 45.0 |
| **4** | 9.5 | 44.4 | 26.7 | 37.0 | 39.5 | 40.6 | 41.3 | 17.4 | 162.0 | 51.1 |
| **5** | 7.1 | 30.8 | 25.5 | 27.5 | 29.9 | 30.6 | 34.5 | 14.8 | 85.8 | 28.8 |
| **6** | 9.0 | 48.0 | 25.0 | 26.0 | 25.0 | 61.0 | 60.0 | 18.0 | 163.0 | 76.0 |
| **7** | 12.5 | 56.0 | 32.0 | 43.0 | 46.0 | 41.0 | 39.0 | 21.0 | 170.0 | 51.0 |
| **8** | 14.0 | 43.0 | 50.0 | 52.0 | 45.0 | 51.0 | 47.0 | 16.0 | 147.0 | 114.0 |
| **9** | 11.0 | 59.0 | 34.0 | 40.0 | 37.0 | 59.0 | 51.0 | 19.0 | 128.0 | 56.0 |
| **10** | 5.7 | 49.8 | 29.4 | 23.4 | 21.2 | 82.0 | 33.6 | 16.3 | 99.0 | 60.5 |
| **11** | 12.0 | 57.0 | 34.0 | 42.0 | 54.0 | 57.0 | 45.0 | 24.0 | 163.0 | 58.0 |

Supplementary Table 2. Sperm progressive motility (%) reported by participating technicians on ten samples.

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| **Technician** | **Samples** |
| **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **I** | **J** |
| **1** | 35.2 | 21.5 | 37.9 | 43.9 | 48.3 | 73.2 | 69.0 | 46.8 | 17.2 | 71.8 |
| **2** | 20.0 | 11.0 | 18.0 | 26.0 | 32.0 | 36.0 | 38.0 | 24.0 | 8.0 | 39.0 |
| **3** | 46.0 | 28.0 | 40.0 | 53.0 | 50.0 | 80.0 | 67.0 | 43.0 | 19.0 | 69.0 |
| **4** | 38.0 | 27.0 | 42.0 | 45.0 | 56.0 | 76.0 | 68.0 | 38.0 | 12.0 | 75.0 |
| **5** | 35.0 | 22.0 | 35.0 | 42.0 | 46.0 | 48.0 | 53.0 | 37.0 | 18.0 | 56.0 |
| **6** | 36.0 | 26.0 | 44.0 | 47.0 | 54.0 | 74.0 | 64.0 | 47.0 | 15.0 | 68.0 |
| **7** | 44.0 | 30.0 | 54.0 | 53.0 | 51.0 | 62.0 | 52.0 | 43.0 | 18.0 | 52.0 |
| **8** | 39.0 | 22.0 | 48.0 | 64.0 | 55.0 | 71.0 | 53.0 | 38.0 | 14.0 | 58.0 |
| **9** | 37.0 | 23.0 | 43.0 | 51.0 | 57.0 | 54.0 | 61.0 | 38.0 | 11.0 | 67.0 |
| **10** | 38.1 | 32.2 | 44.0 | 40.5 | 50.3 | 71.1 | 68.9 | 37.3 | 11.4 | 67.7 |
| **11** | 28.0 | 24.0 | 42.0 | 44.0 | 48.0 | 57.0 | 53.0 | 34 | 20.0 | 55.0 |

Supplementary Table 3. Sperm morphology (%) of captured imaging reported by participating technicians on ten samples.

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| --- | --- |
| **Technician** | **Samples** |
| **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **I** | **J** |
| **1** | 9.4 | 4.2 | 5.5 | 5.9 | 4.7 | 5.1 | 5.0 | 6.9 | 1.5 | 6.6 |
| **2** | 6.0 | 1.0 | 3.0 | 4.0 | 5.0 | 1.0 | 2.0 | 5.0 | 0.0 | 1.0 |
| **3** | 7.0 | 3.0 | 3.0 | 2.0 | 2.0 | 3.0 | 4.0 | 2.0 | 0.0 | 5.0 |
| **4** | 18.0 | 5.0 | 8.0 | 6.0 | 5.0 | 18.0 | 17.0 | 4.0 | 2.0 | 8.0 |
| **5** | 16.0 | 5.0 | 8.0 | 6.0 | 4.0 | 9.0 | 9.0 | 6.0 | 4.0 | 6.0 |
| **6** | 16.0 | 4.0 | 6.0 | 9.0 | 6.0 | 10.0 | 7.0 | 6.0 | 2.0 | 4.0 |
| **7** | 11.0 | 2.0 | 5.0 | 7.0 | 3.0 | 6.0 | 7.0 | 4.0 | 1.0 | 3.0 |
| **8** | 14.0 | 2.0 | 5.0 | 9.0 | 3.0 | 3.0 | 2.0 | 5.0 | 1.0 | 2.0 |
| **9** | 4.0 | 1.0 | 3.0 | 4.0 | 1.0 | 6.0 | 6.0 | 9.0 | 1.0 | 1.0 |
| **10** | 12.6 | 0.6 | 10.1 | 9.7 | 5.6 | 7.2 | 5.3 | 9.9 | 0.0 | 3.7 |
| **11** | 8.0 | 1.0 | 3.0 | 3.0 | 2.0 | 7.0 | 6.0 | 6.0 | 1.0 | 3.0 |