### MANUAL HAEMATOCRIT CENTRIFUGE

O.A Awojobi Snr  
Awojobi Clinic Eruwa, Eruwa Oyo State, Nigeria. e-mail: oluyombo2@yahoo.co.uk

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**Abstract:**

**INTRODUCTION**

Our practice is located in rural south western Nigeria where electricity from the national grid is very erratic. We have resorted to fabricating hospital equipment that require no electricity to operate them. These include the hospital water still and the operating table.

Anaemia, usually due to malaria, is quite common in children and pregnant women in the tropics. Determination of the haematocrit is necessary in the management of these patients.

**THE MANUAL HAEMATOCRIT CENTRIFUGE**

The manual haematocrit centrifuge is fabricated using the rear wheel of a bicycle. (FIGURE 1). The pedal to rear wheel ratio is 2. The diameter of the rear wheel is 63cm and that of the pulley of the rotor is 1.4cm giving a pedal to rotor ratio of 90. The radius of the capillary tube holder is 10.5cm. The rotor can hold 10 microhaematocrit sodalime glass tubes {(Na-heparinized 80 iu/mL) – Model 161313 NRIS (product of Modulhm A/S, 6-8 Vasekaer, DK – 2730 Herlev, Denmark} and will revolve at 5 400 rpm (equivalent to 3360g) with 60 turns of the pedal per minute. A wide-faced electronic clock with a second hand is placed in front of the cyclist and using two pedals it is fairly easy to maintain 60 revolutions of the pedal per minute for 5 minutes. The string belt connecting the wheel to the rotor pulley is adapted from the commercial motor fan belt. Comparative haematocrit readings using the electric centrifuge as control have shown no significant difference.

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**FIGURE 1**