

**WRAIR #2080: Short Title “A Clinical Trial of the PfSPZ Vaccine”**

**Proposed recruitment script for e-mail, electronic, and telephonic contacts**

**(Compensation amounts will not be provided on emails or on websites)**

- 1. Study Objective:** We will look at the safety and tolerability of an experimental malaria vaccine and see whether the vaccine protects people against getting malaria infection. We will also see how your immune (“infection-fighting”) system reacts to the vaccine.
- 2. Study Location:** The WRAIR Clinical Trials Center in Silver Spring, Maryland.
- 3. The PfSPZ Vaccine:** The vaccine is made from malaria parasites that have been weakened by radiation and purified for injection. There is no radiation in the vaccine itself. The vaccine is given directly into a vein in the arm.
- 4. Has this vaccine been tested in humans before?** Yes. This vaccine has been previously given to 120 adults. Eighty (80) people have been vaccinated by injections under the skin, and forty (40) people have received the vaccine directly into a vein. Results of these trials demonstrated that the PfSPZ Vaccine was safe and well tolerated in human volunteers. When the vaccine was given into a vein at the highest dose, it protected volunteers against malaria.
- 5. Number of people in the study:** There will be sixty-nine (69) volunteers in this study. Forty-five (45) volunteers will receive the study vaccine, in either 3 or 5 doses. They will also have 2 “malaria challenges”, about 6 months apart. At each challenge, they will be bitten by five mosquitoes carrying malaria. The other twenty-four (24) volunteers will serve as “Controls”. That means that they will not receive any doses of the vaccine. However, they will undergo the malaria challenge.
- 6. Study Duration:** If you receive the vaccine, you will be in the study for approximately 12 months after the first dose. If you are a “Control” you will be in the study for approximately 2 months from the time of the challenge.
- 7. Study Background:** Malaria is a disease transmitted by mosquito bites. It is a significant cause of death and disability in many areas of the world. People don’t feel well with this disease – its effects are similar to the flu, with symptoms such as fever, headache, body aches, upset stomach and diarrhea.

As you may know, there is currently no approved vaccine to protect people against malaria. The Department of Defense is at the forefront of malaria vaccine research. This research is important to the military because soldiers are frequently deployed to areas with malaria.

**8. Brief Review of Inclusion / Exclusion Criteria**

Inclusion:

- Healthy adults (men and non-pregnant women), civilian or military
- Ages 18 - 45 years old

Exclusion:

- History of malaria or receipt of an investigational malaria vaccine
- History of travel to malaria endemic region within 6 months prior to first immunization
- Evidence of increased cardiovascular disease risk
- Positive HIV, Hepatitis B or Hepatitis B test
- Positive sickle cell screening test
- Heart, lung, liver, or kidney (high blood pressure, diabetes) disease
- Current use of systemic immunosuppressant pharmacotherapy
- Inability to make all follow-up appointments
- Plan for surgery between enrollment and challenge
- Pregnancy or planned pregnancy during the study time period
- Use of certain prescription medications
- History of a very severe response to mosquito-bites (including difficulty breathing or need for medication)
- Alcohol or drug abuse
- Any other significant finding that in the opinion of the clinical investigators would make participation in the study unsafe

## 9. Study Plan:

### Screening

A person who wants to enroll in the study will be screened to ensure they are eligible to participate. Screening includes:

- A detailed explanation of the study
- Completion of the informed consent documents
- An assessment of understanding, to make sure that potential volunteers completely understand the details of the study
- Brief medical history and physical exam
- Urine pregnancy test and blood tests
- ECG (electrocardiogram which measures the “electrical activity” of the heart)

### Pre-Immunization Visit

A person who meets the entry criteria will return about 7 days before the first vaccination. For Infectivity Controls, these volunteers will return about 7 days before the challenge. Pre-Vaccination visit includes:

- Continued explanation of the study
- Study education materials will be provided to volunteers
- Vital Signs will be taken
- Update of medical history
- Mouth swab and blood collection

### Immunization and follow-up visits

- Update medical history and physical exam will be performed.
- Volunteers will receive either 3 or 5 doses of the vaccine depending on the group they are in. The 3 doses will be given 8 weeks apart. The 5 doses will be given every 4 weeks except for the last dose; that will be given 8 weeks after the 4<sup>th</sup> dose.
- The vaccine is given directly into a vein in the volunteer’s arm.
- Volunteers will be required to come in for several follow-up visits after each

- immunization to check safety (exam, history and safety labs) and research labs.
- A urine pregnancy test will be performed for all women before each immunization.

#### Challenge

- This study involves two malaria challenges, approximately three and twenty-four weeks after the last immunization.
- A urine pregnancy test will be performed for all women before the challenge.
- The challenge involves being bitten by five mosquitoes infected with malaria parasites. The mosquitoes are contained in a small cup with a screen on top. Volunteers may develop malaria from the mosquito bites.

#### Post-Challenge and Hotel Phase

- Volunteers will need to return to the Clinical Trials Center on days one, five, six and seven after the challenge to provide blood for testing.
- Starting the night of the 7<sup>th</sup> day after malaria challenge, volunteers will need to check in to a specific hotel to stay for a maximum of 11 days to allow for rapid assessment and treatment by study staff. Volunteers will be carefully monitored during this stay. If untreated, malaria can result in severe illness and even death.
- Blood will be drawn daily to check for malaria parasites. Labwork for safety will be drawn at specific visits.
- Volunteers will have to sleep at the hotel, but can come and go for work and outside activities if they feel well.
- The symptoms of malaria include fever, chills, headache, fatigue, vomiting, diarrhea, muscle aches, and stomachache.
- If malaria does develop, volunteers will be treated promptly with an FDA-approved medication called Malarone® which completely cures malaria if the full course is received. If you cannot tolerate Malarone® for some reason, you would be given Chloroquine or Coartem®, two other drugs which treat and cure malaria.

#### Post-Hotel Phase

- Volunteers will also be required to return to the Clinical Trials Center for specific follow-up visits after the hotel stay.
- Each volunteer will have a unique schedule, based on whether or not they develop malaria.

#### **10. Risks to the volunteers may include:**

- From immunization: Development of malaria from the vaccine itself: this has never occurred from this vaccine. Typical side effects from vaccines are redness, swelling, and soreness at the site of injection. It is possible that the laboratories which check liver function may be elevated for a short period of time. There may be other unknown side effects.
- From challenge: Allergic reaction at the site where mosquitoes bite.
- From malaria: fever, chills, headache, fatigue, vomiting, diarrhea, muscle aches and stomachache.
- From anti-malarial medications: Side effects such as upset stomach, nausea, diarrhea, tiredness and ringing in ears.
- From blood draws: Bruising at the site and dizziness.
- Loss of confidentiality: There is a chance that limited volunteer information may be disclosed to persons outside of this study to include: representatives of Sanaria, the Food and Drug Administration (FDA) and the ethical review boards.

**11. Compensation:**

- Volunteers will be compensated for their time and effort.