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INDONESIA RESEARCH PARTNERSHIP ON INFECTIOUS DISEASES

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Regulatory, Ethics, MTA Submission

By: **INA-RESPOND CRSS**

Introduction

In Indonesia, the conduct of clinical trials in compliance with Good Clinical Practice (GCP) is regulated and overseen by several authorities. These include the Institutional Review Board (IRB)/ Independent Ethics Committee (IEC), which safeguards the rights and well-being of trial participants; the National Agency of Drug and Food Control/ *Badan Pengawas Obat dan Makanan (BPOM)*, which reviews and authorizes clinical trials involving investigational products; and the Ministry of Health (MoH), which provides general health trial policy and monitors the implementation of health research in the country. In accordance with MoH regulations, all clinical trials conducted in Indonesia must be registered in an official clinical trial registry. Additionally, the MoH oversees the review and approval of Material Transfer Agreements (MTA) for the transfer of biological specimens.

These regulations frameworks play a critical role in ensuring the ethical and scientific integrity of clinical research, but they can also significantly impact the feasibility and timeline of a clinical trial. Therefore, a thorough understanding of each authority's requirements is essential prior to clinical trial initiation to ensure timely submission and approval.

Details of the submission process for obtaining approvals from each regulatory authority were presented during the second session of the training program, held on March 17, 2025. The session covered the clinical trial submission workflow, including Ethics submission, Clinical Trial Registries, BPOM submission, Hospital permission and MTA submission.

IRB/IEC Submission

To initiate a clinical trial, obtaining approval from the IRB/IEC is a critical first step. A complete and well-prepared submission package must be compiled, although specific require-

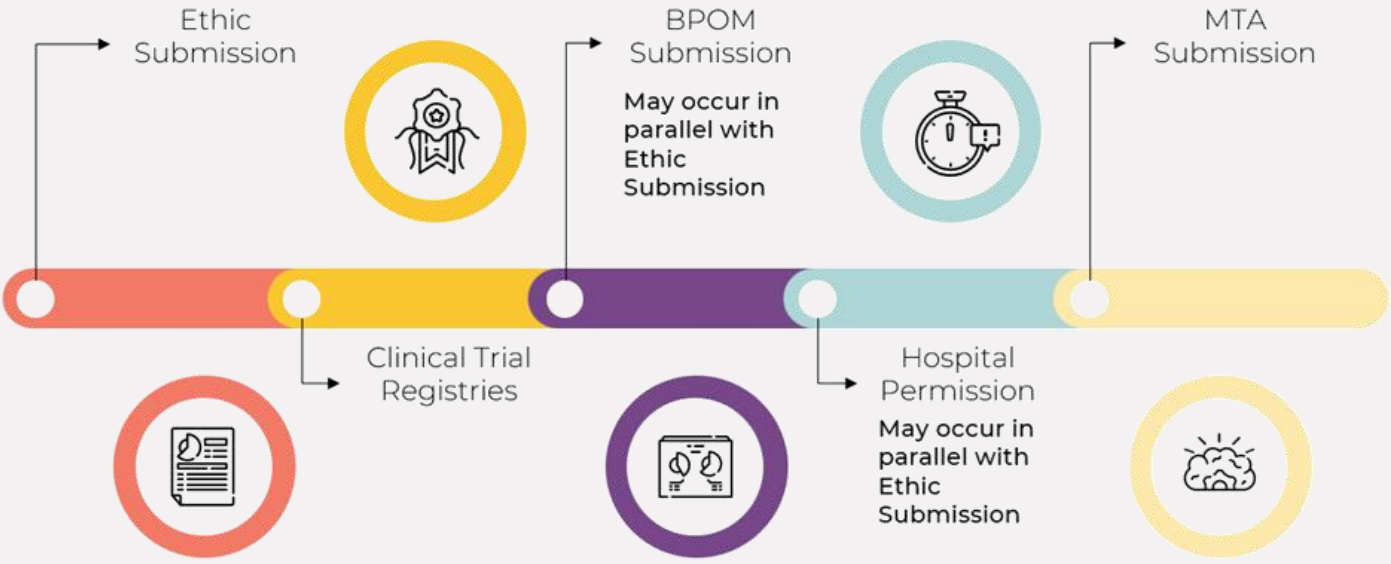

Figure 1. Regulatory Submission Workflow in Clinical Trial.

ments may vary depending on the policies of each the IRB/IEC. In general, the submission package typically includes:

- Cover Letter
- IRB/IEC Application Form
- Final Protocol
- Protocol Signature Page
- Final Site-Specific Informed Consent Form (ICF)
- Final Case Report Form (CRF)
- Current Principal Investigator's (PI) Curriculum Vitae (CV) & valid Good Clinical Practice (GCP) certificate
- Supporting documents, such as Insurance Certificate, Investigator's Brochure (IB), Hospital Accreditation Certificate, Lab Accreditation Certificate & other documents as required by the IRB/IEC.

INA-RESPOND has the option to designate a Central IRB/IEC to provide ethical approval for studies conducted across multiple sites within the network. When this centralized review process is utilized, an IRB Reliance Agreement must be established between the involved institutions and the designated Central IRB/IEC to formalize the arrangement. This agreement ensures that the designated IRB of Record has clearly defined responsibilities and provides consistent ethical oversight across all participating sites. However, if a participating site is still required to obtain approval from its Local IRB/IEC, the site retains full responsibility for submitting the application and managing all necessary reporting and correspondence with the local IRB/IEC. The timeline for review may vary depending (1-2 months) on the policies and processes of each IRB/IEC institution, which must be considered during trial planning. Careful planning and understanding of the IRB/IEC submission pathways — whether centralized or local — are essential for avoiding regulatory delays and ensuring the trial is ready to proceed as scheduled.

Clinical Trial Registries

In accordance with the MoH regulations, all clinical studies conducted in Indonesia must be registered in the national clinical trial registry at https://ina-crr.kemkes.go.id/id, coordinated by Indonesia Clinical Research Center (INA-CRC). Registration should be completed after obtaining ethical approval from the IRB/IEC and Clinical Trial Approval from BPOM.

ICH E6(R3) under principle number 9 mentioned that timely registration on publicly accessible and recognised databases and public posting of clinical trial results, so all clinical trials should be registered in the ClinicalTrials.gov. This step ensures that the study is officially documented and transparent before it begins.

The registered information must include any details about the study, such as the trial title, objectives, methodology, study duration, participating sites, and investigators. Keeping this information accurate and up to date is important throughout the study period. Any significant changes to the study, such as protocol amendments, site updates, or changes in the investigator team, must

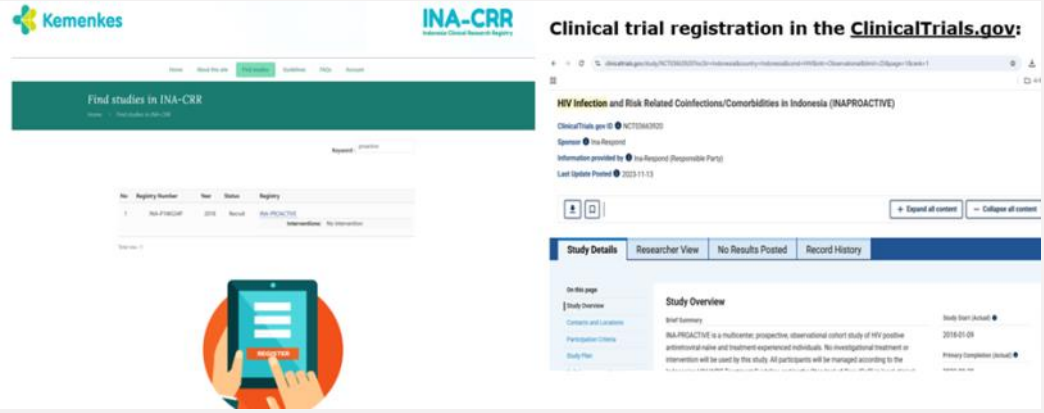

Figure 2. Clinical trial registration on the INA-CRR website and ClinicalTrials.gov

also be promptly reflected in the registry. Maintaining accurate registration records not only fulfils regulatory obligations but also supports transparency, promotes scientific integrity, and build public trust in the research process.

BPOM Submission

A Clinical Trial Approval (CTA) from BPOM is mandatory for all interventional clinical trials before the study is conducted. The submission must be made through a formal application, including a cover letter addressed to the Director of Drug Registration at BPOM.

The document package for CTA submission includes:

- Cover Letter
- BPOM Application Form
- Final Protocol
- Protocol Signature Page
- Final Site-Specific ICF
- IB
- Current PI's CV and valid GCP Certificate
- Hospital Accreditation Certificate
- Laboratory Accreditation Certificate
- Insurance Certificate (if applicable)
- IRB/IEC Approval Letter and IRB/IEC Attendance List
- Clinical Trial Application Document Checklist

CTA submissions are made through the SIAP-UK online platform at https://siap-uk.pom.go.id/ as mentioned in the Figure 3. It is important to note that BPOM will not issue approval until IRB/IEC approval has been obtained. The timeline for BPOM to review a complete Clinical Trial Application is 20 working days after all required documents have been submitted. The CTA is valid for two years from the date of issuance; however, for ongoing studies expected to be completed in less than two years, BPOM will issue a CTA with a validity period that aligns with the study's projected completion timeline.

Figure 3. Clinical Trial Approval Application on the BPOM's Website

Import License

Following the issuance of the CTA from BPOM, the next regulatory step is obtaining Import License from BPOM which is mandatory for importing investigational products (IPs) used in clinical trial. The documents typically needed for this process include:

- Cover Letter
- Drug Certificate of Analysis (CoA)
- Drug Good Manufacturing Practice (GMP) Certificate
- Drug Importer Name & Address
- Drug Manufacturer Name & Address
- Drug Calculation, Batch Number, Expiry Date
- Summary of Batch Protocol from 3 Consecutive Batches (for biologic products only) to ensure product consistency
- Lot Release (for vaccines)
- Package Insert or IB
- IP Label
- Investigational Product Usage Report (for subsequent applications)
- Clinical Trial Approval (for subsequent applications)
- Document Checklist for Clinical Trial Application (to be filled in the Import License section)

Once the documents are prepared, they can be submitted via the BPOM e-Submission portal at https://e-bpom.pom.go.id/. Approximately, the import license will be released 10 working days after the application documents have been com-

pletely submitted. The import license approval is typically valid for one shipment only. For multiple shipments throughout the study, separate applications must be submitted accordingly. To avoid delays in study initiation, it is advisable to prepare and submit the import license application as early as possible after receiving CTA approval.

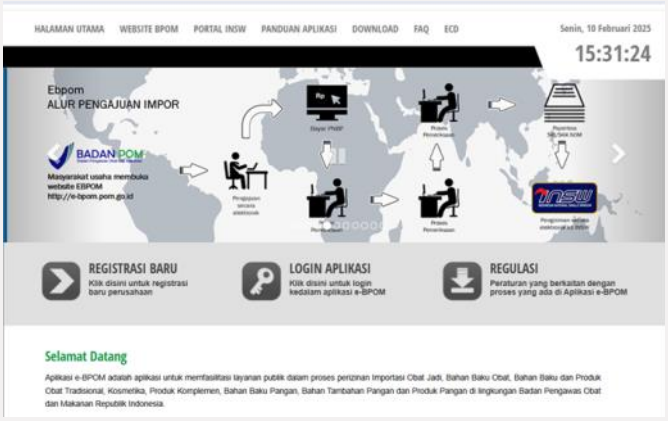

Figure 4. Import License Application at BPOM's Website

MTA Submission

An MTA is required for clinical trials involving the shipment of specimens to laboratory located outside Indonesia. The MTA serves as a formal legal agreement between the sending institutions (e.g., study site or the reference laboratory) and the receiving institution (e.g., central lab overseas), and must be approved by the MoH.

The MTA can be prepared either before the study begins or during or end the trial, depending on the agreement with the and it must be fully approved prior to the shipment of any specimens to the Central Laboratory abroad.

The document required for MTA submission:

- Cover letter addressed according to MTA requirement
- Form A (List of Specimen which will be sent and reason)
- Material Transfer Agreement
- List of materials that will be shipped
- Data Sharing Agreement
- Biosecurity and Biosafety Compliance Certification for Material Management
- CV and GCP of the PIs from all sites in Indonesia and outside of Indonesia
- Study Protocol that approved by Ethic Committee
- MoU or Clinical Trial Agreement between institutions
- IRB/IEC approval from all sites if multicenter study
- For multicenter study, list of institutions and PIs
- BPOM Approval (if needed, example: Clinical Trial specimen)
- Implementing Agreement, including extension agreement (if needed)
- Declaration of competence from the laboratory specimen recipient
- MTA application checklist
- Other documents as needed such as the organizational structure, a permission letter for laboratory use, and laboratory company profiles (if specimens are received by more than one laboratory).

The MTA documents must be submitted through the official MTA Secretariat website at https://mta.kemkes.go.id/ as mentioned in the Figure 5. Prior to the MTA review meeting, the PI should prepare a presentation outlining the study and specimen-related details. It is important to coordinate closely with the PI in advance to finalize the presentation and ensure readiness for discussion.

The PI or designated representative must attend the MTA Review Meeting when invited by the MTA Committee. Participation in this meeting is mandatory to facilitate a clear understanding of the study context and address any committee questions. Once the MTA is approved and specimens are shipped and received by the designated overseas laboratory, the study team is expected to provide the MTA reviewer with a trial progress update as part of ongoing compliance and transparency. The MTA document review process is categorized by

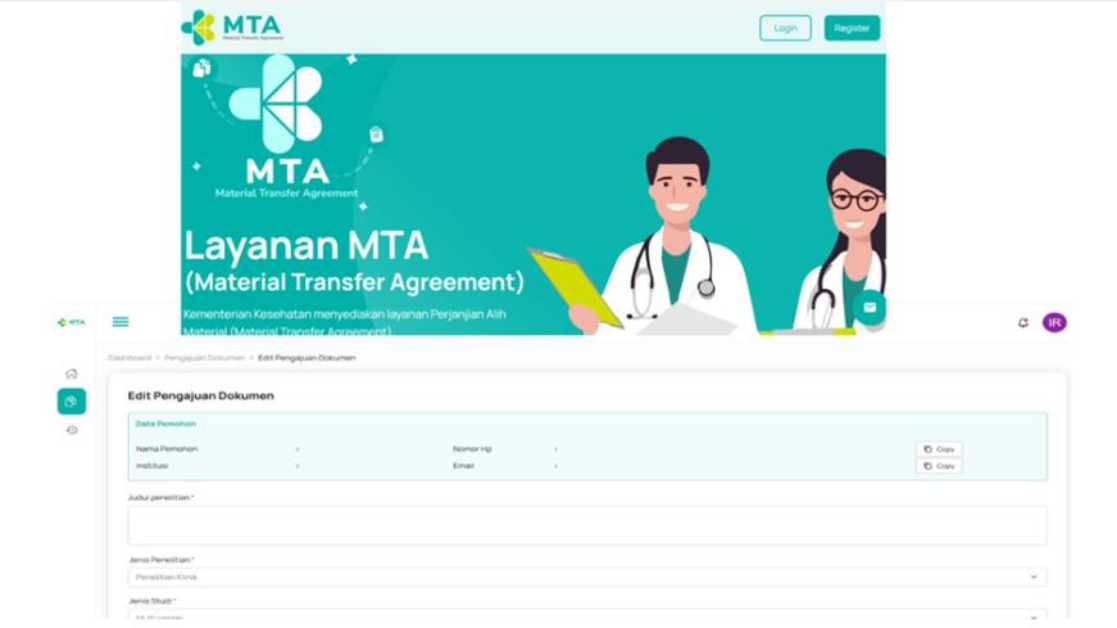

Figure 5. MTA website and Application Dashboard

risk level, with corresponding timelines: exempted or minimal risk reviews are completed within 6–11 working days, expedited or moderate risk reviews take 9–24 working days, and full board or high-risk reviews require 16–26 working days.

Hospital Permission submission

Obtaining trial approval from the site hospital director is a crucial step to ensure that trial procedures are carried out efficiently and in alignment with the hospital's policies and protocols. As part of this process, the trial team must submit a permission letter addressed to the hospital director and comply with all site-specific requirements for conducting the trial. The timeline for hospital permission approval may vary depending on the institution's internal review process — with some approvals taking up to six months. Therefore, early engagement with the hospital's clinical research unit or administration is highly recommended. Once approved, hospital permission is generally valid for one year from the issuance date, so renewal approval is mandatory annually.

Typically, this process also includes the negotiation and signing of a Clinical Trial Agreement between the sponsor and the hospital, detailing responsibilities, budgeting, indemnity, and resource provisions. Once all necessary conditions are fulfilled, the hospital usually issues a study team designation letter, formally acknowledging the trial team and authorizing the study's implementation at the site.

Conclusion

The duration of regulatory submissions varies based on the trial's type and complexity, making timeline flexibility essential. Each regulatory submission, such as IRB/IEC, BPOM, INA-CRC, MTA Committee, and the hospital permission follows its own process and timeline. Delays in approvals can affect the overall study schedule, so the trial startup team must remain focused, motivated, and attentive to document requirements. Close coordination with sponsors and team members is also critical, especially when responding to regulatory feedback or revision requests. These efforts help keep the trial on track and aligned with the approved protocol and regulatory standards.

How Can We Make Blood Donation Safer? The Nucleic Acid Test May Hold The Key

By: Putri Permata Sari, Muhammad Ryznar Faisal Nur Luqmani, Zelfia Riyelly

What's this about?

Every year, on June 14, countries worldwide commemorate World Blood Donor Day (WBDD), which was initiated by the World Health Organization (WHO) in 2004. This event aims to express gratitude to the millions of voluntary blood donors and to raise awareness about the importance of sustainable blood donation in achieving universal access to safe blood transfusions. Blood donation plays a vital role in ensuring the availability of blood and its components, which are often essential for saving the lives of patients in critical need. Blood is frequently required for surgical procedures, trauma care, cancer treatment, and the management of chronic conditions such as severe anemia. While the act of donating blood provides significant lifesaving benefits, the most crucial factor remains the safety of the blood itself. To prevent the transmission of blood-borne infections, such as HIV (Human Immunodeficiency Virus), Hepatitis B (HBV), Hepatitis C (HCV), and Syphilis, rigorous and accurate screening procedures are essential.

In this edition, we spotlight a key issue in blood transfusion safety: the limitations of conventional serological screening and the growing potential of nucleic acid testing (NAT) to detect hidden blood-borne infections, as highlighted in a study by Nedio Mabunda et al.

How was the study conducted?

The study was conducted at two major hospitals in Mozambique between November 2014 and October 2015. It employed a cross-sectional design to assess the prevalence of HIV, HBV, and HCV among blood donors who had passed routine donor screening. All participants were initially screened using national standard serological assays: HIV Ag-Ab ELISA for HIV, HBsAg ELISA for hepatitis B, and Anti-HCV ELISA for hepatitis C. Donors with non-reactive serological results were then further tested using NAT with the COBAS AmpliPrep/COBAS TaqMan system to detect HIV RNA (ribonucleic acid), HBV DNA (deoxyribonucleic acid), and HCV RNA. Plasma samples from six individual donors with non-reactive serological results were pooled for testing. If a pool yielded a positive result, each donor sample in the pool was individually retested to identify the specific infection.

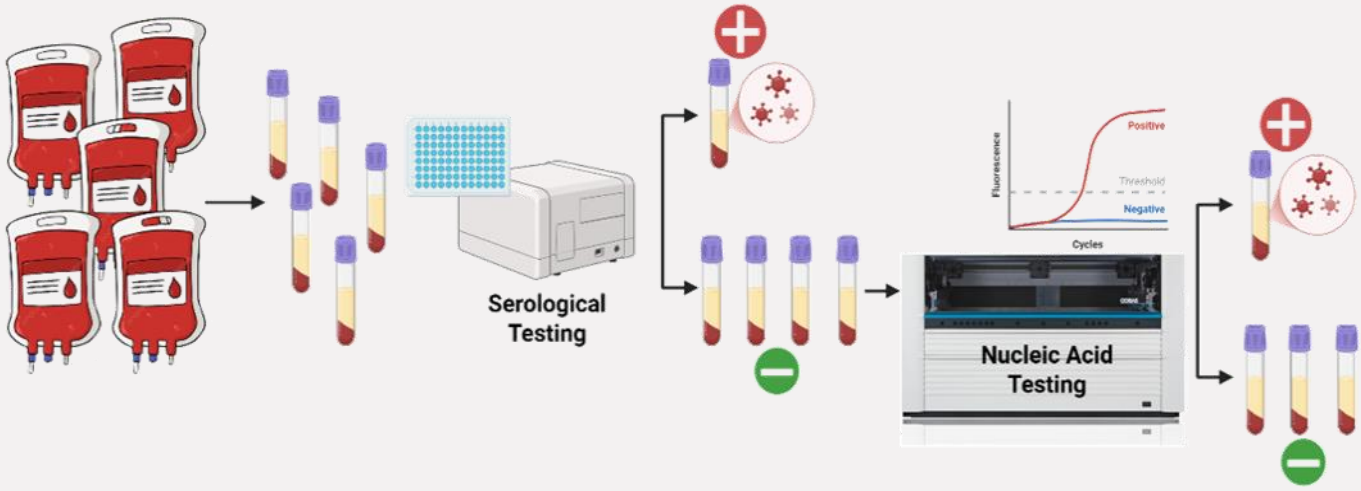

Figure 1. Illustration of a study flow

What did the study find?

Among all 2,783 donors, the initial serological testing revealed a prevalence of 4.6% for HIV, 4.5% for HBV, and 0.4% for HCV. However, when 2,498 seronegative samples were further tested using NAT, it detected HIV RNA in 7 donors (2.6 per 1,000), HBV DNA in 33 donors (12.5 per 1,000), and HCV RNA in 6 donors (2.6 per 1,000). In total, NAT uncovered 46 hidden infections in donors who had been cleared through standard screening methods. Notably, a large proportion of the NAT-positive HBV cases were classified as occult hepatitis B infection, defined by the presence of HBV DNA without detectable HBsAg. The estimated prevalence of undetected infections identified by NAT was 17.2 per 1,000 donors, substantially exceeding the <1% threshold recommended by WHO for safe blood donation.

Why does this matter?

The study's findings are significant not only because of its large and representative sample size from Mozambique, but also because they reveal a critical gap in current blood donor screening practices. The detection of hidden infections in donors who had already passed standard serological screening highlights the limitations of relying solely on conventional methods, particularly in regions with a high burden of blood-borne infections. Furthermore, the risk in this study was assessed at the donor level. However, a single blood donation is often separated into multiple components, such as plasma, platelets, and red blood cells, each potentially administered to different recipients, thereby multiplying the potential transmission risk. The study provides important insights into the need for increased awareness and the adoption of NAT to improve blood safety. NAT shortens the diagnostic window period and can identify early-stage and occult infections that serology may miss.

Any limitations?

Despite its strengths, the study does not fully explore the operational and financial challenges of implementing NAT in routine blood screening, particularly in low-resource settings.

The study was also conducted in well-equipped urban hospitals, which may not reflect conditions in more remote or under-resourced blood centers that rely heavily on rapid diagnostic tests with lower sensitivity.

What's next?

This study underscores the need to reassess blood screening strategies in settings with a high prevalence of blood-borne infections. In Mozambique, future directions may include expanding the use of NAT beyond national reference centers, assessing the cost-effectiveness, and strengthening systems for monitoring transfusion-transmitted infections in recipients.

In the context of Indonesia, where the prevalence of HIV, HBV, and HCV remains relatively high in many areas, these findings highlight the relevance of adopting NAT as part of a broader strategy to enhance blood safety. The growing demand for blood transfusions across various clinical settings underscores the importance of accurately and early detecting infectious agents in donated blood. Implementing NAT in Indonesia is feasible, but it is not without challenges. Compared to ELISA or rapid tests, NAT involves significantly higher costs and requires specialized laboratory infrastructure, which is currently limited to major hospitals and central laboratories. Trained personnel and robust quality assurance systems are also essential to ensure reliable results.

Using NAT for blood donor screening can be a valuable option, particularly in line with the WHO recommendation to implement NAT in high-prevalence areas of transfusion-transmissible infections. In the long term, the use of NAT is expected to help reduce the risk of blood-borne infectious diseases through transfusion, contributing to safer healthcare practices. In the spirit of the 2005 WBDD theme: "Give blood, give hope – together we save lives", this article underscores the vital importance of ensuring that every unit of donated blood is not only available, but also safe. Safe blood saves lives—not only in emergency situations, but also by preventing long-term harm from blood-borne infections.

Article source:

Mabunda N, Augusto O, Zicai AF, et al. Nucleic acid testing identifies high prevalence of blood-borne viruses among approved blood donors in Mozambique. PLoS One. 2022 Apr 28;17(4):e0267472.

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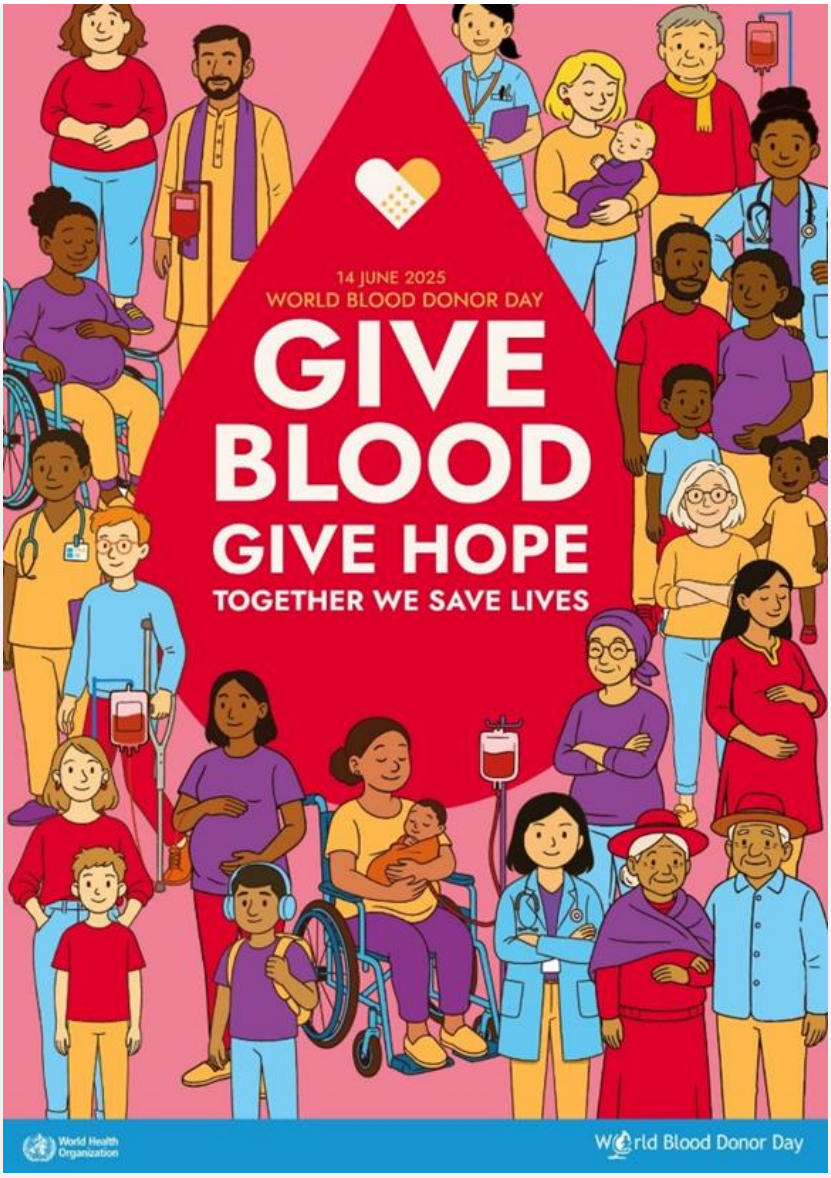

The Best Exercise for Hypertension: Why Isometric Training Stands Out

By: Caleb Leonardo Halim

Hypertension, often dubbed the "silent killer," is a global health threat that affects over one billion people worldwide. It quietly damages arteries and vital organs, significantly increasing the risk of heart disease, stroke, kidney failure, and even cognitive decline. While medications play a crucial role in managing high blood pressure, non-pharmacological approaches such as physical activity have emerged as equally essential in achieving long-term blood pressure control.

Traditionally, aerobic exercise has been recommended as the most effective form of exercise for lowering blood pressure. Walking, jogging, cycling, and swimming are common physical activities recommended for maintaining good health. However, recent research reveals a surprising contender: isometric exercise.

This lesser known form of static muscle contraction is proving to be incredibly effective for people living with hypertension. Let’s explore how and why isometric training may be the best physical activity option for controlling high blood pressure.

Understanding Hypertension

Hypertension occurs when the force of blood against the walls of the arteries remains persistently high. A reading of 140/90 mmHg or higher is typically considered hypertensive, although recent guidelines suggest that even lower readings (130/80 mmHg) may already carry increased cardiovascular risk. Blood pressure is influenced by various factors including cardiac output, arterial stiffness, vascular resistance, blood volume, and the neurohormonal system.

There are two primary types of hypertension:

- **Primary (essential) hypertension**: This accounts for approximately 90–95% of cases and develops gradually over many years without a known underlying cause. Risk factors include aging, genetic predisposition, obesity, sedentary lifestyle, excessive salt intake, alcohol consumption, and chronic stress.
- **Secondary hypertension**: This type results from identifiable causes such as kidney disease, hormonal disorders (hyperaldosteronism), use of certain medications (NSAIDs, decongestants, etc.), or sleep apnea.

The danger of hypertension lies in its subtle progression. Most individuals do not experience any symptoms until damage to the cardiovascular or renal system becomes advanced. That is why it is often labeled the "silent killer."

Complications of uncontrolled hypertension include:

- Heart disease: including left ventricular hypertrophy, heart failure, and coronary artery disease.
- Stroke: due to increased pressure on cerebral arteries, leading to hemorrhagic or ischemic events.
- Chronic kidney disease: from sustained damage to the renal vasculature.
- Retinopathy: leading to vision impairment or blindness.
- Cognitive decline: associated with microvascular damage in the brain.

Globally, the World Health Organization recognizes hypertension as one of the leading causes of premature mortality, contributing to an estimated 10.4 million deaths annually. In Indonesia, over 40% of

adults are diagnosed with hypertension, and this number is expected to rise as the population ages and urban lifestyles become more prevalent.

Despite the availability of effective medications, hypertension control rates remain suboptimal. Many patients are either unaware of their condition, poorly adherent to medications, or unable to make necessary lifestyle adjustments. This highlights the urgent need for accessible, sustainable, and evidence based non drug strategies of which exercise stands out as a powerful and practical solution.

Exercise as Medicine

Physical activity is one of the cornerstones of hypertension management. Exercise improves heart function, reduces arterial stiffness, enhances endothelial function, and promotes vasodilation. As a result, regular physical activity can help lower both systolic and diastolic blood pressure.

Common types of exercises include:

- Aerobic exercise (walking, jogging)
- Dynamic resistance training (weightlifting)
- High-intensity interval training (HIIT)

Each form provides unique cardiovascular benefits, yet for individuals with hypertension especially older adults or those with limited mobility some types may not be suitable or sustainable.

This is where **isometric exercise** makes its entrance.

The Science Behind Isometric Training Isometric exercises involve the static contraction of muscles without changing their length or causing joint movement. Think of holding a wall squat, pressing your palms together, or squeezing a handgrip device the muscles are activated and generate force, but without visible motion.

A groundbreaking meta-analysis published in the British Journal of Sports Medicine in 2023 compared different exercise modalities for their effectiveness in reducing blood pressure. Isometric training came out on top, demonstrating a greater average reduction in both systolic and diastolic pressures compared to aerobic and dynamic resistance training:

- Systolic reduction: up to -8.2 mmHg
- Diastolic reduction: up to -4.0 mmHg

To put it in context, these results are comparable to some antihypertensive medications.

Why Isometric Exercises Work So Well

There are several physiological mechanisms through which isometric training helps reduce blood pressure:

1. Post exercise hypotension: After static contractions, blood vessels dilate more efficiently, leading to a prolonged drop in blood pressure.
2. Improved endothelial function: Isometric activity enhances the ability of blood vessels to expand and contract.
3. Reduced sympathetic nervous system activity: This lowers resting heart rate and blood pressure.
4. Enhanced neuromuscular efficiency: Leading to better muscle control and vascular responsiveness.

Moreover, isometric exercises can be performed at home, without equipment or extensive training, making them accessible for nearly everyone.

Recommended Isometric Exercises for Hypertension

Here are four simple but scientifically supported isometric exercises that individuals with hypertension can perform safely:

Dead Hang

Target muscles: Forearms, shoulders, grip strength, upper back

How to perform:

1. Find a pull-up bar or sturdy overhead bar that can support your full body weight.

2. Grip the bar with both hands, shoulder-width apart, palms facing forward (overhand grip).
3. Allow your body to hang freely without swinging, keeping your shoulders active (slightly pulled down, not shrugged).
4. Keep legs straight or bend knees slightly to avoid touching the floor.
5. Breathe steadily and hold the position for the desired duration.

Duration:

- Beginners: Start with 10–20 seconds
- Intermediate: 30–45 seconds
- Advanced: up to 1 minute or more

Sets: 3-4 sets, rest 1-2 minutes between sets
Frequency: 3 times per week

Safety tips:

- Avoid holding your breath during the hang.
- If you have shoulder or wrist issues, consult a healthcare provider before trying.
- Use chalk or straps if grip is a limiting factor.

Plank

Target muscles: Core (abdominals, obliques), shoulders, glutes, lower back

How to perform:

1. Begin in a forearm plank position: elbows directly under shoulders, forearms flat on the floor, body forming a straight line from head to heels.
2. Engage your core muscles by pulling your belly button toward your spine.
3. Keep your hips level (not sagging or lifted) and your neck in a neutral position.
4. Focus on slow, controlled breathing while holding the position.

Duration:

- Beginners: 20–30 seconds
- Intermediate: 45–60 seconds
- Advanced: up to 2 minutes or longer

Sets: 3–5 sets, rest 30–60 seconds between sets
Frequency: 3–5 times per week

Safety tips:

- Stop if you feel pain in the lower back or shoulders.
- Modify by dropping knees if needed while keeping form.
- Avoid holding breath—steady breathing improves safety and endurance.

Wall Sit

Target muscles: Quadriceps, glutes, hamstrings, core

How to perform:

1. Stand with your back against a flat wall, feet shoulder-width apart and about 60 cm (2 feet) away from the wall.
2. Slowly slide your back down the wall until your knees form a 90-degree angle—like sitting on an invisible chair.
3. Keep your back flat against the wall, core engaged, and knees directly above your ankles (not past your toes).
4. Hold the position and focus on even breathing.

Duration:

- Beginners: 20–30 seconds
- Intermediate: 45–60 seconds
- Advanced: up to 2 minutes

Sets: 3–4 sets, rest 1–2 minutes between sets
Frequency: 3–5 times per week

Safety tips:

- Do not let knees extend past your toes.
- If you feel joint pain in knees, reduce the depth.
- Avoid holding your breath—breathe in through your nose, out through your mouth.

Handgrip Squeeze

Target muscles: Forearms, hand muscles, grip strength, cardiovascular regulation

How to perform:

1. Use a handgrip dynamometer or a soft ball (tennis or stress ball) as resistance.
2. Hold the device in one hand and squeeze it with 30% of your maximum strength.
3. Maintain the squeeze for the entire duration without releasing.
4. Keep your arm relaxed at your side or resting on a surface, elbow slightly bent.
5. Breathe continuously and evenly throughout the hold.

Duration:

- Hold for 2 minutes per set (or as tolerated)
- Switch to the other hand and repeat

Sets: 4 sets (2 per hand), with 1–2 minutes rest between sets.
Frequency: 3 times per week

Safety tips:

- Avoid overexerting—stay within the 30% maximal effort range.
- Discontinue if you feel pain, tingling, or cramping.
- Consistent breathing is critical—never hold your breath.

These four exercises require minimal time and can be integrated into daily routines, such as during TV time or work breaks.

Safety Considerations. While isometric exercises are generally safe, individuals with certain cardiovascular conditions, such as unstable angina or severe arrhythmias, should consult a healthcare provider before beginning any new regimen. Proper breathing techniques (avoiding breath-holding) are also essential to prevent spikes in blood pressure during exertion.

Conclusion

A Simple Yet Powerful Approach Isometric exercise is a game changer in the landscape of hypertension management. Easy to perform, lowbcost, and time efficient, these exercises offer impressive benefits backed by solid scientific evidence.

For individuals with limited mobility, time constraints, or low exercise tolerance, isometric training provides a viable and effective alternative to traditional workouts. And for the general hypertensive population, integrating these exercises into an overall healthy lifestyle can further enhance cardiovascular outcomes.

While no single intervention should replace medication when necessary, isometric training can serve as a powerful complement in the fight against high blood pressure. Start with just five minutes a day and your heart will thank you later.

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INA-RESPOND Newsletter

The Indonesia Research Partnership on Infectious Disease newsletter is an internal bulletin of INA-RESPOND research network intended to disseminate information related to the network's studies, activities, and interests to all members of the network as well as its sponsors and related parties.

The INA-RESPOND newsletter welcomes all network members and stakeholders to contribute by submitting articles related to the network's studies and interests. Send your articles or subscribe to our latest newsletter by sending an email to INA.Secretariat@ina-respond.net