



- Operator- and patient-friendly
- Commonly used clinically relevant autonomic tests
- Standardization and quantification of all test procedures
- Based on cutting-edge hemodynamic monitoring technology



Autonomic nervous system testing

For sound diagnostics and effective treatment of autonomic nervous system disorders, clinical specialists such as neurologists and cardiologists rely on autonomic testing. To evaluate specific conditions and diseases, a range of procedures is available based on the continuous measurement of blood pressure and heart rate values. Finapres Medical Systems has developed the Guided Autonomic Testing (GAT) application to provide specialists with trustworthy quantified test results, help operators to perform standardized procedures and enable the definition of patient-specific protocols.

Cutting-edge hemodynamic monitoring

The GAT application runs on the Finapres® NOVA, a non-invasive continuous blood pressure monitor that uses the Finapres® technology, with 30 years of proven reliability attested by leading researchers and clinicians. The Finapres® NOVA uses a double finger cuff system for accurate, patient-friendly measurements of various hemodynamic parameters such as blood pressure, heart rate variability and baroreceptor sensitivity. It allows convenient data transfer and is ready for new Finapres® hardware modules and software applications – such as the GAT application.



Operator- and patient-friendly testing

- The operator- and patient-friendly GAT application guides the operator (either the specialist or a clinical assistant or lab assistant) and the patient through a series of autonomic test maneuvers.
- The standard protocol uses test parameter values based on clinical practice. Settings can be easily modified by the operator.
- Operator instructions are presented by a clear graphical user interface, while simple patient instructions are provided on a tablet, which helps to inform and reassure the patient. In certain procedures, the tablet can also be used for video recording of the patient's face.
- A detailed, clear PDF report is generated automatically to provide quantified results of all tests performed.

Operator-definable protocol

The GAT application fully supports the operator to coordinate and perform autonomic tests in a straightforward and standardized manner.

- The standard protocol is based on the widely recognized Autonomic Testing procedures from the Mayo Clinic (Rochester, USA).
- All test protocols are adjustable. The operator can select which tests have to be performed, define test order and frequency, and modify test parameters as well.
- Markers are automatically added to the measurement during all procedure steps, for example for starting and finishing a new maneuver. Markers and corresponding time points are included in the final GAT report.



Procedure list

The following well-known, clinically relevant autonomic tests are supported:

- Valsalva test
- Tilt Table test
- Deep Breathing test
- Stand test
- Cold Pressor test
- Carotid Sinus Massage test
- Drugs Administration test

This list is based on consultation with key opinion leaders from all over the world. Following user demand, procedures can be added in the future.

Unique GAT application features



Video recording during Tilt Table test

- The tablet records a video of the patient's face during the test, as recommended by international guidelines.
- The video can be synchronized with the measurements for a complete and reliable review.

Patient guidance during Deep Breathing test

- The patient can follow the breathing rhythm as visualized on the tablet.
- The tablet shows the remaining time to inhale and exhale according to the indicated rhythm.
- These features support a standardized procedure for every test.

Operator and patient guidance during Valsalva test

- The patient blows into a mouthpiece connected to the Finapres® NOVA.
- The tablet provides the patient with instant feedback on blown pressure and test duration.
- The operator can check the blown pressure to assess whether the patient has generated sufficient respiratory effort.
- The operator can change the pressure threshold and maneuver time when necessary.

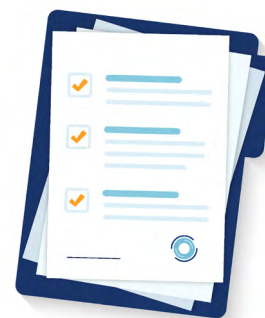


Unique GAT application features



GAT reporting for faster diagnostics

- After finishing the tests, the GAT application creates a report with quantified results, featuring all relevant hemodynamic and cardiac parameters. When a maneuver has been performed more than once, the GAT application provides an overview of all available data to help the operator to select the best maneuver.
- The report also contains the heart rate variability (HRV) and baroreceptor sensitivity (BRS) parameters from Finapres' Autonomic Testing application (when installed).
- The GAT application guarantees uniformity in test procedures and reporting to facilitate standardization and quantification of autonomic test procedures for faster diagnostics.
- Comments can be added by both the operator during the test and by the specialist during the measurement review. All comments appear on the first page of the report.
- A preview of the PDF report can be downloaded [here](#).



GAT integration with other Finapres modules

The GAT module can be easily integrated with other Finapres software modules:

- The Autonomic testing (AT) application appends more parameters and graphs to the GAT report, such as baroreceptor sensitivity (BRS) and heart rate variability (HRV) parameters.
- The Advanced Hemodynamic (HD) application provides additional hemodynamic parameters, such as stroke volume and cardiac output.
- The NOVAScope PC application enables the user to synchronize video recordings from the tablet with the NOVA measurements for a complete and reliable review.

GAT module contents

- GAT software for the Finapres® NOVA.
- Tablet for on-screen patient instructions.
- Wi-Fi dongle for tablet - Finapres® NOVA connection.
- Mouthpiece, mouthpiece adaptor and airway filter for Valsalva test.
- Optional: tablet clamp for easy and stable mounting on table and bedside.



Guided Autonomic Testing

More information

More information about the Guided Autonomic Testing application can be found on our website www.finapres.com

Cardiovascular Autonomic Testing Revisited webinar

Are you interested in learning more about how our products support clinicians in diagnosing their patients? Dr. Artur Fedorowski presented "Cardiovascular Autonomic Testing Revisited" during a webinar sponsored by Finapres Medical Systems. Click [here](#) to view the recording and to get more insights!

Support

Finapres Medical Systems provides support to specialists and operators to get up and running conveniently with the Finapres® NOVA and its GAT application. This includes on-site and online consultation and training.

References

- Brignole et al. 2018 ESC Guidelines for the diagnosis and management of syncope. Eur Heart J, 2018
- Lahrmann & Struhal. Autonomic Function Tests - From Bedside To Laboratory Investigations. 20th WCN, 2011
- Novak. Quantitative Autonomic Testing. J Vis Exp, 2011
- Ducla-Soares et al. Wavelet analysis of autonomic outflow of normal subjects on head-up tilt, cold pressor test, Valsalva manoeuvre and deep breathing. Exp Physiol, 2007

Contact

For more information on the GAT application and the Finapres® NOVA, please contact Finapres Medical Systems or a local dealer.

Finapres Medical Systems BV

Finapres Medical Systems BV, based in the Netherlands, develops and distributes medical devices and software for totally non-invasive autonomic testing and hemodynamic monitoring. These devices are the result of over 30 years of research and user experiences in this area of expertise.

The proven and worldwide well accepted Finapres® NOVA technologies are based on the most accurate and robust continuous non-invasive measurement of blood pressure and model based computation of cardiac output (Finapres Modelflow®).

Many renowned research institutes as well as prominent hospitals like NASA, Harvard, Johns Hopkins and Mayo Clinic are currently using this Finapres® equipment.

Finapres is an associated company of DEMCON, a developer, producer and supplier of high-end medical equipment solutions. The collaboration between these companies has led to the next generation of non-invasive hemodynamic monitoring devices, the Finapres® NOVA, related software and new clinical applications.

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