UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-8
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Titan Medical Inc.
(Exact name of registrant as specified in its charter)

Ontario, Canada	**98-0663504**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

76 Berkeley Street
Toronto, Ontario M5A 2W7
Canada
(Address of principal executive offices)

TITAN MEDICAL INC. STOCK OPTION PLAN (AMENDED AND RESTATED EFFECTIVE AS OF JUNE 9, 2021)

TITAN MEDICAL INC. SHARE UNIT PLAN (AMENDED AND RESTATED EFFECTIVE AS OF JUNE 8, 2022)

TITAN MEDICAL INC. DEFERRED SHARE UNIT PLAN (AMENDED AND RESTATED EFFECTIVE AS OF JUNE 8, 2022)

TITAN MEDICAL INC. EMPLOYEE SHARE PURCHASE PLAN DATED JUNE 8, 2022
(Full title of plan)

C T Corporation System
1015 15th Street N.W., Suite 1000
Washington, DC 20005
(Name and address of agent for service)

(202) 572-3100
(Telephone number, including area code, of agent for service)

Copies to:
Dorsey & Whitney LLP
James Guttman
Richard Raymer
TD Canada Trust Tower
Brookfield Place
161 Bay Street, Suite 4310
Toronto, Ontario Canada M5J 2S1
(416) 367-7376

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer [ ]	Accelerated Filer []
Non-Accelerated Filer [X]	Smaller Reporting Company []
Emerging Growth Company [X]	

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. [ ]

EXPLANATORY NOTE

This registration statement on Form S-8 (the "**Registration Statement**") is being filed for the purpose of registering an additional 16,214,640 common shares (the "**Common Shares**") of Titan Medical Inc. (the "**Registrant**" or "**Company**") for issuance pursuant to (i) the exercise of options under the Titan Medical Inc. Stock Option Plan, as amended and restated effective as of June 9, 2021 (the "**Stock Option Plan**"), (ii) the exercise or settlement of awards granted under the Titan Medical Inc. Deferred Share Unit Plan, as amended and restated effective as of June 8, 2022 (the "**Deferred Share Unit Plan**"), (iii) the exercise or settlement of awards granted under the Titan Medical Inc. Share Unit Plan, as amended and restated effective as of June 8, 2022 (the "**Share Unit Plan**") and (iv) Common Shares issuable upon the exercise or settlement of awards granted under the Titan Medical Inc. Employee Share Purchase Plan, as of June 8, 2022 (the "**ESPP**").

This Registration Statement also registers reoffers and resales on a continuous or delayed basis of up to 9,322,819 Common Shares previously issued and underlying stock options and restricted share units previously granted under the Stock Option Plan and Share Unit Plan (together, the "**Plans**") prior to the filing of this Registration Statement by certain of our current and former directors and officers, pursuant to the reoffer prospectus included herein, which was prepared pursuant to General Instruction C to Form S-8, in accordance with the requirements of Part I of Form F-3 (the "**Reoffer Prospectus**"). The Common Shares to be reoffered or resold pursuant to the Reoffer Prospectus by the selling securityholders identified in the Reoffer Prospectus (collectively, the "**Selling Securityholders**") may be deemed "restricted securities" under the Securities Act of 1933, as amended (the "**Securities Act**") and the rules and regulations promulgated thereunder.
On February 12, 2019 the Registrant filed a registration statement on Form S-8 (SEC File No. 333-229612) to register 2,211,494 Common Shares issuable upon exercise of options granted or to be granted under the Titan Medical Inc. Stock Option Plan, as amended and restated on March 14, 2018.

On July 22, 2020, the Registrant filed a registration statement on Form S-8 (File No. 333-240018) to register 9,455,713 Common Shares of the Registrant issuable (i) upon exercise of options under the Titan Medical Inc. Stock Option Plan, as amended and restated effective as of July 15, 2020, (ii) upon exercise or settlement of awards granted under the Titan Medical Deferred Share Unit Plan effective as of May 29, 2019, and (iii) upon exercise or settlement of awards granted under the Titan Medical Inc. Share Unit Plan effective as of May 29, 2019.

On April 26, 2021, the Registrant filed a registration statement on Form S-8 (SEC File No. 333-255497) to register an additional 4,781,515 Common Shares of the Registrant issuable (i) upon exercise of options under the Titan Medical Inc. Stock Option Plan, as amended and restated effective as of October 20, 2020, (ii) upon exercise or settlement of awards granted under the Titan Medical Inc. Deferred Share Unit Plan effective as of May 29, 2019, and (iii) upon the exercise or settlement of awards granted under the Titan Medical Inc. Share Unit Plan, as amended as of February 16, 2021.

On June 9, 2021, the Registrant's shareholders approved the Stock Option Plan.

On June 8, 2022, the Registrant's shareholders approved (i) the Deferred Share Unit Plan, (ii) the Share Unit Plan, and (iii) the ESPP.

The contents of the Registrant's registration statements on Form S-8 (File Nos. 333-229612, 333-240018 and 333-255497) are incorporated by reference herein.

PART I
INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The information specified in Item 1 and Item 2 of Part I of Form S-8 is omitted from this Registration Statement in accordance with the provisions of Rule 428 under the Securities Act and the introductory note to Part I of Form S-8. The documents containing the information specified in Part I of Form S-8 will be delivered to the participants in the equity benefit plans covered by this Registration Statement as specified by Rule 428(b)(1) under the Securities Act.

REOFFER PROSPECTUS

TITAN MEDICAL

Titan Medical Inc.

9,322,819 Common Shares

This reoffer prospectus relates to 9,322,819 common shares, no par value (the **"Common Shares"**), of Titan Medical Inc., an Ontario corporation (the **"Company"**, the **"Registrant"**, **"we"** , **"us"** or **"our"**), which may be offered from time to time by certain shareholders that are our current or former executive officers or directors (collectively, the **"Selling Securityholders"**) for their own accounts. The Common Shares have been, or will be, issued pursuant to options or restricted share units granted to the Selling Securityholders pursuant to the Company's Stock Option Plan, as amended and restated effective June 9, 2021 (the "**Stock Option Plan**") and Share Unit Plan, as amended and restated effective June 8, 2022 (the "**Share Unit Plan**" and together with the Stock Option Plan, the "**Plans**"). We will not receive any of the proceeds from the sale of the Common Shares by the Selling Securityholders made hereunder.

The Selling Securityholders may sell the Common Shares in a number of different ways and at varying prices, including sales in the open market, sales in negotiated transactions and sales by a combination of these methods. The Selling Securityholders may sell any, all or none of the Common Shares and we do not know when or in what amount the Selling Securityholders may sell their Common Shares hereunder following the effective date of the registration statement of which this reoffer prospectus forms a part. The price at which any of the Common Shares may be sold, and the commissions, if any, paid in connection with any such sale, are unknown and may vary from transaction to transaction. The Common Shares may be sold at the market price of the Common Shares at the time of a sale, at prices relating to the market price over a period of time, or at prices negotiated with the buyers of Common Shares. The Common Shares may be sold through underwriters or dealers which the Selling Securityholders may select. If underwriters or dealers are used to sell the Common Shares, we will name them and describe their compensation in a prospectus supplement. We provide more information about how the Selling Securityholders may sell Common Shares in the section titled "*Plan of Distribution."* The Selling Securityholders will bear all sales commissions and similar expenses. Any other expenses incurred by us in connection with the registration and offering that are not borne by the Selling Securityholders will be borne by us.

The Common Shares are listed on the Toronto Stock Exchange ("**TSX**") under the symbol "TMD" and the NASDAQ Capital Market ("**Nasdaq**") under the symbol "TMDI." On September 14, 2022, the last reported sale price per share of our Common Shares was CDN$0.64 per share on the TSX and $0.49 per share on the Nasdaq.

We are an "emerging growth company" as defined under the federal securities laws and, as such, are subject to reduced public company reporting requirements.

Investing in our securities involves a high degree of risk that are described in the "*Risk Factors*" section beginning on page 13 of this reoffer prospectus.

Neither the United States Securities and Exchange Commission (the "SEC") nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this reoffer prospectus is September 15, 2022

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Neither we nor the Selling Securityholders have authorized anyone to provide any information or to make any representations other than those contained in this reoffer prospectus or any accompanying prospectus supplement that we have prepared. We and the Selling Securityholders take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This reoffer prospectus is an offer to sell only the securities offered hereby and only under circumstances and in jurisdictions where it is lawful to do so. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this reoffer prospectus or any applicable prospectus supplement. This reoffer prospectus is not an offer to sell securities, and it is not soliciting an offer to buy securities, in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this reoffer prospectus or any prospectus supplement is accurate only as of the date on the front of those documents only, regardless of the time of delivery of this reoffer prospectus or any applicable prospectus supplement, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This reoffer prospectus and the documents incorporated by reference herein contain “forward-looking statements" and “forward-looking information” (collectively, “forward-looking statements”), within the meaning of applicable Canadian and United States securities laws. All statements in this discussion other than statements of historical facts that address future events, developments, or transactions that the Company expects, are forward-looking statements that relate to future events or future performance and reflect the Company’s expectations and assumptions regarding the growth, results of operations, performance and business prospects and opportunities of the Company. These forward-looking statements are made as of the date of this reoffer prospectus or, in the case of documents incorporated by reference herein, as of the date of such documents. Forward-looking statements are frequently, but not always, identified by words such as “expect”, “anticipate”, “believe”, “intend”, “estimate”, “predict”, “continue”, “potential”, “project”, “target”, “plan”, “possible”, “milestone”, “objective” and similar expressions, or statements that events, conditions or results “will”, “may”, “could”, “would” or “should” occur or be achieved. Any forward-looking statements or statements of “belief”, including the statements made under “Risk Factors”, represent the Company’s estimates only as of the date of this reoffer prospectus and the documents incorporated by reference herein, respectively, and should not be relied upon as representing the Company’s estimates as of any subsequent date. These forward-looking statements may concern anticipated developments in the Company’s operations in future periods, the adequacy of the Company’s financial resources and other events or conditions that may occur in the future, and include, without limitation, statements regarding:

- the Company's development, regulatory and commercialization objectives, including plans/milestones, any estimated costs, schedules for completion and probability of success and including without limitation the table set forth under the heading “Development Plan” in the Company’s annual report on Form 20-F, filed with the SEC on March 24, 2022;
- the Company's intention with respect to updating any forward-looking statement after the date on which such statement is made or to reflect the occurrence of unanticipated events;
- the Company's business is focused on the development and commercialization of innovative surgical technologies for single access robotic assisted surgery (“**RAS**”) requiring only a single patient access point;
- the Enos System (as defined below) under development includes a surgeon-controlled patient cart that includes a 3D high-definition vision system and multi-articulating instruments for performing surgical procedures;
- the Enos System under development includes a surgeon workstation that provides the surgeon with an ergonomic interface to the patient cart and a 3D high-definition view of the surgical procedure;
- the Company's intent to initially pursue gynecologic surgical indications for use of its Enos System;
- the Company's plan to develop a robust training curriculum and post-training assessment tools for surgeons and surgical teams;
- the training curriculum, which is planned to include cognitive pre-training, psychomotor skills training, surgery simulations, live animal and human cadaver lab training, surgical team training, troubleshooting and an overview of safety;
- post-training assessment, which will include validation of the effectiveness of those assessment tools;
- the Company’s expectation that the Enos System will be classified as a Class II by the U.S. Food and Drug Administration (the “**FDA**”);
- the Company's intention to obtain marketing authorization through a classification request for novel devices in accordance with a De Novo classification submission;
- the outcome of any review by the FDA and the time required to complete activities necessary for marketing authorization;
- the Company's plans on further communications with the FDA to clarify the requirements for the investigational device exemption (“**IDE**”) clinical study protocol and understand any special controls which the FDA may apply;
- the performance of human surgeries with the Enos System will require an IDE from the FDA, which must be submitted and approved in advance;

- the recruitment of surgeons from multiple hospital sites will be necessary to perform the surgeries as well as the recruitment of patients willing to participate in the IDE study, with each hospital site requiring approval of their independent institutional review board ("**IRB**") to approve the studies;
- an application to the IRB of each hospital will be made once the FDA has approved the Company's IDE application;
- the Company's intention to submit to the FDA an application for marketing authorization upon successful completion of the IDE clinical study;
- the Company's ability to secure required capital to fund development and operating costs in a timely manner;
- the Company's plan to further expand its patent portfolio by filing additional patent applications as it progresses in the development of robotic-assisted surgical technologies and, potentially, by licensing suitable technologies;
- the Company's plan, where appropriate, to license out to third parties certain technologies and any associated intellectual property;
- the Company's intention to secure additional financing to continue the Company's research and development program through to completion and take advantage of future opportunities;
- the Company's expectation that it will be able to finance its continuing operations by accessing public markets for its securities;
- the Company's intention with respect to not paying any cash dividends on the Common Shares in the foreseeable future; and
- the Company's intention to retain future earnings, if any, to finance expansion and growth

Forward-looking statements are statements about the future and are inherently uncertain, and actual results of the Company or other future events or conditions may differ materially from those reflected in the forward-looking statements due to a variety of risks, uncertainties and other factors, including those referred to in this reoffer prospectus, including but not limited to those described in the section titled "*Risk Factors*" in this reoffer prospectus, in any document incorporated by reference herein. These risks include, but are not limited to:

- the Company will require additional financing which may not be available to us on acceptable terms, or at all;
- the Company has a history of losses and there is no guarantee that the Company will be able to achieve profitability;
- the Company relies on contractual arrangements with third parties and there can be no assurance that these arrangements will achieve their goals;
- the Company depends on key personnel and the loss of the service of such personnel could have a negative impact on the Company's business;
- the Company expects to increase the size of the Company's management team in the future and the Company's failure to attract and retain new members of the Company's management team could adversely affect the Company's business;
- the Company's trade secrets or other confidential information may be compromised;
- the Company relies on third parties for several important aspects of the Company's business, including those related to clinical activities, and there are a range of issues that are outside of the Company's direct control;
- the development, regulatory and commercialization plans for the Enos System may not be completed within the estimated timeframes, if at all;
- the RAS industry is highly competitive, and a number of the Company's competitors have significantly greater financial and human resources than the Company;
- the Company's commercial success depends significantly on the Company's ability to operate without infringing the patents and other proprietary rights of third parties;

- should the Company be unable to obtain and enforce its patent rights, the Company's business could be materially harmed;
- the Company has licensed a portion of its intellectual property portfolio to Medtronic plc ("**Medtronic**"), which limits its ability to independently enforce those licensed rights without seeking the cooperation of Medtronic;
- the Company may be unable to obtain or maintain the Company's trademarks or trade names and may incur substantial costs attempting to defend and enforce the Company's rights in this regard;
- certain of the Company's directors and officers also serve as directors and/or officers of other companies, creating the possibility that a conflict of interest could arise;
- the Company's financial results and results of operations have fluctuated in the past and may continue to be volatile going forward;
- the Company is targeting a rapidly evolving robotic assisted surgical device market, and it is not clear that surgeons or hospitals will choose the Enos System over those offered by the Company's competitors;
- the introduction of more technologically advanced products and/or new entrants to the market could impact the Company's operating and financial results;
- the Company may become subject to potential product liability claims, and the Company may be required to pay damages that exceed the Company's insurance coverage or may otherwise tarnish our reputation;
- the Company's technology may depend on third party licenses for certain functions or procedures and there can be no guarantee that the Company will be able to secure and maintain those licenses;
- government and agency regulation controls all aspects of the Company's product and business, and changes in policies and additional regulations may be enacted that could prevent or delay regulatory clearance or approval of the Company's products;

- upon obtaining marketing authorization, subsequent modifications to the Company's products may require new regulatory marketing authorizations and may require us to cease marketing or recall the modified products until further authorization is obtained;
- upon obtaining marketing authorization for our products, we are still subject to extensive post-market regulations and our failure to meet strict regulatory requirements could require us to pay fines, incur other costs or even close our facilities;
- if one of our products, or a malfunction of one of our products, causes a death or contributes to a death or a serious injury, we will be subject to medical device reporting regulations, which can result in voluntary corrective actions or agency enforcement actions;
- a recall of the Company's products, either voluntarily or at the direction of the FDA or another governmental authority or regulatory body, or the discovery of serious safety issues with the Company's products, could have a significant adverse impact on the Company;
- compliance with accounting regulations and tax rules across multiple jurisdictions is resource intensive and expensive and could expose the Company to penalties and fines;
- contingent liabilities could have a negative impact on the Company's financial position;
- a lengthy and uncertain sales cycle for the Enos System could have a negative impact on our operating results;
- the failure of the Company to meet its established product development, regulatory and commercialization milestones in a timely manner or at all, may affect the Company's operational and financial results;
- the Company is still in the process of developing its Enos System and there can be no certainty that a commercially viable product will emerge from this process;
- commercial manufacturing of the Enos System is expected to be an extremely detailed and complex process with the potential for delays, interruptions, or cost overruns;

- the Company does not control all aspects of the development of the Enos System as it relies on third-party suppliers and development firms;
- the success of the IDE clinical study depends on the engagement of a sufficient number of hospital sites, surgeons, and the recruitment of a sufficient number of patients;
- a product malfunction, including in any clinical studies, could result in delays, liability and negative perceptions of the Enos System and the Company;
- certain reusable instruments, camera components and other accessories require repeated cleaning and sterilization;
- as the Company is a Canadian company, it may be difficult for U.S. shareholders to effect service on the Company or to realize on judgments obtained in the U.S.;
- the Company is subject to risks related to additional regulatory burden and controls over financial reporting;
- fluctuations in foreign currency exchange rates may adversely affect the Company's financial results;
- the Company may be delisted from Nasdaq if it does not satisfy continued listing requirements;
- the Company may not be able to maintain the Company's status as a "Foreign Private Issuer" or otherwise maintain its eligibility to use the Multijurisdictional Disclosure System;
- the Company is an "emerging growth company" and cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make it less attractive to investors;
- the Company is likely a "passive foreign investment company", which may have adverse U.S. federal income tax consequences for U.S. investors;
- the Company may face or otherwise be exposed to cyber-security risks and threats;
- the Company's financial condition and results of operations for fiscal 2022 may be adversely affected by global disruptions, including the ongoing COVID-19 pandemic; and
- challenging global political and economic conditions and the impact of supply chain constraints could adversely affect our development program, commercialization efforts, operations and financial results; and
- the impact on the global economy of the Russian invasion of Ukraine and the responses of governments around the world.

Forward-looking statements are based on a number of assumptions, which may prove to be incorrect, including but not limited to assumptions about:

- general business and current global economic conditions;
- future success of current research and development activities;
- achieving development milestones;
- ability to achieve product cost targets;
- competition;
- no significant changes to regulatory clearance or approval processes in the United States and Europe;
- stable tax rates and benefits;
- the availability of financing on a timely basis;
- the Company's and competitors' costs of production and operations;

- the Company's ability to attract and retain skilled employees;
- the Company's ongoing relations with its third-party service providers;
- the design of the Enos System and related platforms and equipment;
- the progress and timing of the development of the Enos System;
- costs related to the development of the Enos System;
- receipt of all applicable regulatory authorizations, approvals or clearances;
- estimates and projections regarding the robotic-assisted surgery equipment industry;
- protection of the Company's intellectual property rights;
- market acceptance of the Enos Systems under development;
- the Company's ability to meet the continued listing standards of Nasdaq and the TSX; and
- the type of specialized skill and knowledge required to develop the Enos System and the Company's access to such specialized skill and knowledge.

The Company cautions that the foregoing list of important factors and assumptions is not exhaustive. Although the Company has attempted to identify on a reasonable basis important factors and assumptions related to forward-looking statements, there can be no assurance that forward-looking statements will prove to be accurate, as events or circumstances or other factors could cause actual results to differ materially from those estimated or projected and expressed in, or implied by, these forward-looking statements. Other than as specifically required by law, the Company undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made, or to reflect the occurrence of unanticipated events, whether as a result of new information, future events or results or otherwise. Accordingly, readers should not place undue reliance on forward-looking statements.

PROSPECTUS SUMMARY

This summary highlights selected information from this reoffer prospectus and does not contain all of the information that is important to you in making an investment decision. This summary is qualified in its entirety by the more detailed information included in this reoffer prospectus, including the documents incorporated by reference herein. Potential investors should read the entire prospectus carefully, including the risks of purchasing our common stock discussed in "Risk Factors."

Overview

The Company is a medical technology company headquartered in Toronto, Ontario with operations in Chapel Hill, North Carolina. The Company is focused on enhancing RAS using innovative technology through a single access point. The Enos™ system, a single access robotic-assisted surgical platform (the "**Enos System**") is being developed with an ergonomic focus to provide a surgical experience that imitates real-life movements that surgeons demand. The platform includes multi-articulating instruments designed to allow surgeons an increased range of motion in a confined space, with dexterity and the ability to exert the forces necessary to complete common surgical tasks. With the Enos System, The Company intends to initially pursue gynecologic surgical indications. By focusing on a single access point, the Company believes that patient trauma, post-operative pain and scarring can be reduced, and patients may be able to recover from surgery faster.

The Company's innovations in RAS, including those directed at the Enos System, are protected by a growing patent portfolio that includes more than 200 patents and patent applications. Certain of the Company's RAS technologies and related intellectual property have been licensed to Medtronic, while retaining world-wide rights to commercialize the technologies for use with the Enos System.

The Enos System is under development and has not been authorized for marketing by the FDA or approved by any other regulatory authority in any other jurisdiction and until such authorizations or approvals are obtained, is not yet commercially available.

In addition to leveraging in-house R&D capabilities, including for activities related to the Enos System and the development work performed pursuant to the agreement with Medtronic, the Company engages subcontractors and consultants to perform certain design and development, prototyping, and assembly and manufacturing activities.

Emerging Growth Company

As a company with less than $1.07 billion in revenue during our most recently completed fiscal year, we qualify as an "emerging growth company" as defined in Section 2(a) of the Securities Act, as modified by the Jumpstart Our Business Startups Act of 2012. As an emerging growth company, we may take advantage of specified reduced disclosure and other exemptions from requirements that are otherwise applicable to public companies that are not emerging growth companies. These provisions include:

- reduced disclosure about our executive compensation arrangements;
- exemptions from non-binding stockholder advisory votes on executive compensation or golden parachute arrangements; and
- exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions for up to five years or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company if we have more than $1.07 billion in annual revenues as of the end of a fiscal year, if we are deemed to be a large-accelerated filer under the rules of the SEC or if we issue more than $1.0 billion of non-convertible debt over a three-year period.

About This Offering

This reoffer prospectus relates to the public offering, which is not being underwritten, by the Selling Securityholders listed in this reoffer prospectus, of up to 9,322,819 Common Shares previously issued and underlying options or restricted share units previously granted under the Plans prior to the filing of this Registration Statement to the Selling Securityholders. The Selling Securityholders may from time to time sell, transfer or otherwise dispose of any or all of the Common Shares covered by this reoffer prospectus through underwriters or dealers, directly to purchasers (or a single purchaser) or through broker-dealers or agents. We will receive none of the proceeds from the sale

of the Common Shares by the Selling Securityholders. We will bear all expenses of registration incurred in connection with this offering, but all selling and other expenses incurred by the Selling Securityholders will be borne by them.

Risk Factors

Our business is subject to numerous risks and uncertainties, including those highlighted in the section titled "*Risk Factors*" that represent challenges that we face in connection with the successful implementation of our strategy and growth of our business. Before you invest in our Common Shares, you should carefully consider all the information in this reoffer prospectus, including matters set forth in the section captioned "*Risk Factors.*"

Corporate Information

The Company is the successor corporation formed pursuant to two separate amalgamations under the *Business Corporations Act* (Ontario) on July 28, 2008. The address of the Company's corporate office and its principal place of business is 76 Berkeley Street, Toronto, Ontario, Canada M5A 2W7. On May 29, 2020, the Company established Titan Medical USA Inc. ("**Titan USA**"), a Delaware corporation and a wholly owned subsidiary of the Company. Titan USA's principal activity consists of R&D as well as the manufacturing of instruments and camera systems for the Enos System from its leased premises located in Chapel Hill, North Carolina. The information contained on our website or connected to our website is not incorporated by reference into, and should not be considered part of, this reoffer prospectus.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks and uncertainties described in this reoffer prospectus and the documents incorporated herein by reference, including the risks described under the heading "Risk Factors" in the annual report on Form 20-F, filed with the SEC on March 24, 2022, and subsequent reports filed with the SEC, together with the financial and other information contained or incorporated by reference in this reoffer prospectus. If any of the risks actually occur, our business, results of operations, financial condition, and prospects could be harmed. In that event, the trading price of our securities could decline, and you could lose part or all of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations.

DETERMINATION OF THE OFFERING PRICE

The Selling Securityholders will determine at what price they may sell the Common Shares, and such sales may be made at prevailing market prices or at privately negotiated prices. See "*Plan of Distribution*" below for more information.

USE OF PROCEEDS

The Common Shares offered hereby are being registered for the account of the Selling Securityholders named in this reoffer prospectus. All proceeds from the sales of Common Shares will go to the Selling Securityholders and we will not receive any proceeds from the resale of the Common Shares by the Selling Securityholders.

DESCRIPTION OF SECURITIES

The description of the Common Shares contained in our Registration Statement on Form 40-F, as filed with the SEC on June 11, 2018 (File No. 001-38524), including any amendment or report filed for the purpose of amending such description is incorporated herein by reference.

MARKETS

The Common Shares are listed on the TSX under the symbol "TMD" and the Nasdaq under the symbol "TMDI."

SELLING SECURITYHOLDERS

The following table sets forth information with respect to the Selling Securityholders and the Common Shares beneficially owned by the Selling Security holders as of August 31, 2022 and the percentage of beneficial ownership is calculated based on 111,890,707 Common Shares outstanding. The Selling Securityholders may offer all, some or none of the Common Shares covered by this reoffer prospectus. The Selling Securityholders identified below may have sold, transferred or otherwise disposed of some or all of their Common Shares since the date on which the information in the following table is presented in transactions exempt from, or not subject to, the registration requirements of the Securities Act. Information concerning the Selling Securityholders may change from time to time and, if necessary, we will amend or supplement this reoffer prospectus accordingly. We cannot give an estimate as to the number of Common Shares that will actually be held by the Selling Securityholders upon termination of this offering because the Selling Securityholders may offer some or all of their Common Shares under the offering contemplated by this reoffer prospectus or acquire additional Common Shares. We cannot advise you as to whether the Selling Securityholders will, in fact, sell any or all of such Common Shares.

We have determined beneficial ownership in accordance with the rules of the SEC and the information is not necessarily indicative of beneficial ownership for any other purpose. Unless otherwise indicated below, to our knowledge, the persons and entities named in the tables have sole voting and sole investment power with respect to all securities that they beneficially own, subject to community property laws where applicable.

Name of Selling Securityholder(1)	**Common Shares Beneficially Owned Prior to the Resale**	**Common Shares Offered for Resale**	**Common Shares Beneficially Owned After Completion of the Resale**	**% of Common Shares Beneficially Owned After Completion of the Resale**
Paul Cataford, Board Chair	328,351	506,922	--	--
Anthony J. Giovinazzo, Board member	92,820	199,820	18,000	*
Heather L. Knight, Board member	84,404	209,404	--	--
Cathy Steiner, Board member	32,085	157,085	--	--

Cary G. Vance, President & CEO		113,457		3,207,985		22,500		*
Stephen Lemieux, CFO		248,805		1,180,004		--		--
Jasminder Brar, VP Legal and IP, General Counsel		342,912		1,086,524		--		--
Tammy Carrea, VP Quality and Regulatory Affairs		67,400		439,758		--		--
Willam Fahey, VP Manufacturing and Operations		--		1,043,527		--		--
Chris Seibert, VP Upstream Marketing		105,015		433,633		1,585		*
Kristen Galfetti, VP Investor Relations		76,454		438,870		--		--
Chien Huang, VP Finance		127,302		419,287		--		--
Total		**1,619,005**		**9,322,819**		**42,085**		

(1) The business address of each of these shareholders is c/o Titan Medical Inc., 76 Berkeley Street, Toronto, Ontario M5A 2W7.
* The percentage of Common Shares beneficial owned by these shareholders after completion of the resale is less than one percent.

PLAN OF DISTRIBUTION

The Common Shares covered by this reoffer prospectus are being registered by the Company for the account of the Selling Securityholders. The Common Shares offered may be sold from time to time directly by or on behalf of each Selling Securityholder in one or more transactions on the TSX or Nasdaq or any other stock exchange or marketplace on which the Common Shares may be listed or quoted at the time of sale, in privately negotiated transactions, or through a combination of such methods, at market prices prevailing at the time of sale, at prices related to such prevailing market prices, at fixed prices (which may be changed) or at negotiated prices. The Selling Securityholders may sell Common Shares through one or more agents, brokers or dealers or directly to purchasers. Such brokers or dealers may receive compensation in the form of commissions, discounts or concessions from the Selling Securityholders and/or purchasers of the Common Shares or both. Such compensation as to a particular broker or dealer may be in excess of customary commissions.

In connection with their sales, a Selling Securityholder and any participating broker or dealer may be deemed to be "underwriters" within the meaning of the Securities Act, and any commissions they receive and the proceeds of any sale of Common Shares may be deemed to be underwriting discounts and commissions under the Securities Act. We are bearing all costs relating to the registration of the Common Shares. Any commissions or other fees payable to brokers or dealers in connection with any sale of the shares will be borne by the Selling Securityholders or other party selling such shares. Sales of the Common Shares must be made by the Selling Securityholders in compliance with all applicable state and federal securities laws and regulations, including the Securities Act. In addition to any Common Shares sold hereunder, Selling Securityholders may sell Common Shares in compliance with Rule 144.

For so long as the Company does not meet the requirements for registering securities on Form F-3, the Common Shares to be offered or resold by means of this reoffer prospectus by the Selling Securityholders may not exceed, during any three-month period, the amount specified in Rule 144(e) under the Securities Act. In addition, any securities covered by this reoffer prospectus, which otherwise qualify for sale pursuant to Rule 144 of the Securities Act may be sold under Rule 144 of the Securities Act rather than pursuant to this reoffer prospectus.

There is no assurance that the Selling Securityholders will sell all or a portion of the Common Shares offered hereby. The Selling Securityholders may agree to indemnify any broker, dealer or agent that participates in transactions involving sales of the Common Shares against certain liabilities in connection with the offering of the Common Shares arising under the Securities Act. We have notified the Selling Securityholders of the need to deliver a copy of this reoffer prospectus in connection with any sale of the Common Shares.

The anti-manipulation rules of Regulation M under the Securities Exchange Act of 1934, as amended, (the "**Exchange Act**") may apply to sales of our Common Shares and activities of the Selling Securityholders, which may limit the timing of purchases and sales of any of the Common Shares by the Selling Securityholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the Common Shares to engage in passive market-making activities with respect to the Common Shares. Passive market-making involves transactions in which a market maker acts as both our underwriter and as a purchaser of our common stock in the secondary market. All of the foregoing may affect the marketability of the Common Shares and the ability of any person or entity to engage in market-making activities with respect to the Common Shares.

Once sold under the registration statement of which this reoffer prospectus forms a part, the Common Shares will be freely tradable in the hands of persons other than our affiliates.

LEGAL MATTERS

The validity of the Common Shares which are being offered under the registration statement of which this reoffer prospectus forms a part will be passed upon for the Company by Borden Ladner Gervais LLP.

EXPERTS

Our consolidated financial statements as of and for the years ended December 31, 2021 and 2020 are incorporated by reference into this prospectus in reliance upon the report of BDO Canada LLP, independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

We are required to file certain periodic reports and other information with the SEC as required by the Exchange Act. You can read our SEC filings, including this reoffer prospectus, over the internet at the SEC's website at www.sec.gov. As we are a Canadian issuer, we also file continuous disclosure documents with the Canadian securities regulatory authorities, which documents are available on the System for Electronic Document Analysis and Retrieval website maintained by the Canadian Securities Administrators at www.sedar.com.

Our website address is https://titanmedicalinc.com. The information contained on, or that may be accessed through, our website is not a part of, and is not incorporated into, this reoffer prospectus.

We incorporate information into this reoffer prospectus by reference, which means that we disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this reoffer prospectus, except to the extent superseded by information contained in this reoffer prospectus or by information contained in documents filed with the SEC after the date of this reoffer prospectus. This reoffer prospectus incorporates by reference the documents set forth below that have been previously filed with the SEC; provided, however, that, except as noted below, we are not incorporating any documents or

information deemed to have been furnished rather than filed in accordance with the rules of the SEC. These documents contain important information about us and our financial condition:

- our Annual Report on Form 20-F for the fiscal year ended December 31, 2021 filed with the SEC on March 24, 2022
- the Management's Discussion and Analysis for the three months ended March 31, 2022, included as exhibit 99.3 to our current report on Form 6-K filed with the SEC on May 12, 2022;
- the 2022 First Quarter Condensed Interim Consolidated Financial Statements (Unaudited), included as exhibit 99.2 to our current report on Form 6-K filed with the SEC on May 12, 2022;
- the Management's Discussion and Analysis for the three and six months ended June 30, 2022, included as exhibit 99.3 to our current report on Form 6-K filed with the SEC on August 11, 2022;
- the 2022 Second Quarter Condensed Interim Consolidated Financial Statements (Unaudited), included as exhibit 99.2 to our current report on Form 6-K filed with the SEC on August 11, 2022;
- the Management Information Circular for the annual and special meeting of shareholders held on June 8, 2022, included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 22, 2022;
- the Material Change Report dated July 5, 2022 included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 29, 2022
- the Material Change Report dated July 5, 2022 included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 29, 2022
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- the Material Change Report dated July 5, 2022 included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 29, 2022
- the Material Change Report dated July 5, 2022 included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 29, 2022
- all other reports filed by us under Section 13(a) or 15(d) of the Exchange Act since December 31, 2021; and
- the description of the Common Shares contained in our Registration Statement on Form 40-F, as filed with the SEC on June 11, 2018 (File No. 001-38524), including any amendment or report filed for the purpose of amending such description.

In addition, this reoffer prospectus shall also be deemed to incorporate by reference all subsequent annual reports filed on Form 20-F, Form 40-F or Form 10-K, and all subsequent filings on Forms 10-Q and 8-K (as applicable) filed by us pursuant to the Exchange Act prior to the termination of the offering made by this reoffer prospectus. We may incorporate by reference into this reoffer prospectus any Form 6-K that is furnished to the SEC after the date of the filing of the registration statement of which this reoffer prospectus forms a part and before the date of termination of the offering made by this reoffer prospectus. Any such Form 6-K that we intend to so incorporate shall state in such form that it is being incorporated by reference into this reoffer prospectus. The documents incorporated or deemed to be incorporated herein by reference contain meaningful and material information relating to us and the readers should review all information contained in this reoffer prospectus and the documents incorporated or deemed to be incorporated herein by reference.

For purposes of this reoffer prospectus, any statement contained in a document incorporated, or deemed to be incorporated, by reference herein shall be deemed to be modified or superseded for purposes of this reoffer prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is, or is deemed to be, incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this reoffer prospectus.

We will provide without charge upon written or oral request to each person, including any beneficial owner, to whom a reoffer prospectus is delivered, a copy of any and all of the documents which are incorporated by reference in this reoffer prospectus but not delivered with this reoffer prospectus (other than exhibits unless such exhibits are specifically incorporated by reference in such documents). You may request a copy of these documents by writing or telephoning us at:

76 Berkeley Street
Toronto, ON M5A 2W7
(416) 548-7522

TITAN MEDICAL

TITAN MEDICAL INC.

9,322,819 Common Shares

Reoffer Prospectus

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation Of Documents By Reference.

The following documents which have been and will in the future be filed by the Registrant with the United States Securities and Exchange Commission (the "**SEC**") are incorporated into this Registration Statement by reference:

(a) The Company's annual report on Form 20-F for the year ended December 31, 2021, filed with the SEC on March 24, 2022;

(b) The Management's Discussion and Analysis for the three months ended March 31, 2022, included as exhibit 99.3 to our current report on Form 6-K filed with the SEC on May 12, 2022;

(c) The 2022 First Quarter Condensed Interim Consolidated Financial Statements (Unaudited), included as exhibit 99.2 to our current report on Form 6-K filed with the SEC on May 12, 2022;

(d) The Management's Discussion and Analysis for the three and six months ended June 30, 2022, included as exhibit 99.3 to our current report on Form 6-K filed with the SEC on August 11, 2022;

(e) The 2022 Second Quarter Condensed Interim Consolidated Financial Statements (Unaudited), included as exhibit 99.2 to our current report on Form 6-K filed with the SEC on August 11, 2022;

(f) The Management Information Circular for the annual and special meeting of shareholders held on June 8, 2022, included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 22, 2022;

(g) The Material Change Report dated July 5, 2022 included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 29, 2022;

(h) The Material Change Report dated July 5, 2022 included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 29, 2022;

(i) The Material Change Report dated July 5, 2022 included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 29, 2022;

(j) The Material Change Report dated July 5, 2022 included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 29, 2022;

(k) The Material Change Report dated July 5, 2022 included as exhibit 99.1 to our current report on Form 6-K filed with the SEC on July 29, 2022;

(l) All other reports filed by the Registrant under Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") since December 31, 2021; and

(m) The description of the Common Shares contained in our Registration Statement on Form 40-F, as filed with the SEC on June 11, 2018, including any amendment or report filed for the purpose of amending such description.

In addition, all reports and documents filed by us under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this Registration Statement and prior to the filing of a post-effective amendment which indicates that all securities being offered have been sold or which deregisters all securities then remaining unsold, and any Form 6-K furnished by us during such period or portions thereof that are identified in such Form 6-K as being incorporated by reference into this Registration Statement, shall be deemed to be incorporated by reference in and to be part of this Registration Statement from the date of filing of each such document.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

None.

Item 6. Indemnification of Directors and Officers.

Under the *Business Corporation Act* (Ontario) (the "**OBCA**"), the Registrant may indemnify a director or officer, a former director or officer or another individual who acts or acted at the Registrant's request as a director or officer, or an individual acting in a similar capacity, of another entity, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of that association with the Registrant or other entity on condition that (i) the individual acted honestly and in good faith with a view to the best interests of the Registrant or, as the case may be, to the best interests of the other entity for which the individual acted as a director or officer or in a similar capacity at the Registrant's request, and (ii) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, the individual had reasonable grounds for believing that his conduct was lawful. Further, the Registrant may, with court approval, indemnify a person described above in respect of an action by or on behalf of the Registrant or other entity to obtain a judgment in its favor, to which the individual is made a party because of the individual's association with the Registrant or other entity, against all costs, charges and expenses reasonably incurred by the individual in connection with such action if the individual fulfills condition (i) above. Additionally, the

Registrant may advance money to a director, officer or other individual for the costs, charges, and expenses of a proceeding referred to above, with the necessary court approval where noted, but the individual is required to repay the money to the Registrant if the individual does not satisfy condition (i) above. An individual described above is also entitled to indemnification as described above from the Registrant as a matter of right if the individual was not judged by a court or other competent authority to have committed any fault or omitted to do anything the individual ought to have done, and he fulfills conditions (i) and (ii) above. The Registrant has entered into an Indemnity Agreement with each of its directors under which the Registrant has agreed to indemnify the individual in substantially the same circumstances as outlined in this paragraph.

In accordance with the OBCA, the by-laws of the Registrant provide that the Registrant shall indemnify a director or officer, a former director or officer, or an individual who acts or acted at the Registrant's request as a director or officer, or an individual acting in a similar capacity, of another entity, and such person's heirs and legal representatives, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of that association with the Registrant or other entity, provided that (i) the individual acted honestly and in good faith with a view to the best interests of the Registrant or, as the case may be, to the best interest of the other entity for which the individual acted as a director or officer or in a similar capacity at the Registrant's request; and (ii) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, the person had reasonable grounds for believing that the individual's conduct was lawful.

A policy of directors' and officers' liability insurance is maintained by the Registrant, at its expense, which insures directors and officers for losses as a result of claims against the directors and officers of the Registrant in their capacity as directors and officers.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the Registrant pursuant to the foregoing provisions, the Registrant has been informed that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

In addition, in accordance with the OBCA, the Registrant has entered into indemnity agreements with its directors and officers whereby the Registrant has agreed, subject to applicable law and provided such director or officer complied with the above-mentioned conditions, to indemnify such individuals against all costs, charges and expenses which they may sustain or incur in third party actions in which they are involved because of their association with the Registrant.

Item 7. **Exemption from Registration Claimed.**

The Common Shares being reoffered and resold pursuant to the Reoffer Prospectus were deemed to be exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act and/or Rule 701 promulgated thereunder, as transactions by an issuer not involving a public offering or pursuant to a written compensatory benefit plan.

Item 8. **Exhibits.**

Number	Exhibit
4.1	Titan Medical Inc. Stock Option Plan (Amended and Restated effective as of June 9, 2021) (incorporated by reference from Exhibit 99.1 to the Company's Form 6-K filed on September 9, 2022)
4.2	Titan Medical Inc. Share Unit Plan (Amended and Restated effective as of June 8, 2022) (incorporated by reference from Exhibit 99.1 to the Company's Form 6-K filed on September 9, 2022)
4.3	Titan Medical Inc. Deferred Share Unit Plan (Amended and Restated effective as of June 8, 2022) (incorporated by reference from Exhibit 99.1 to the Company's Form 6-K filed on September 9, 2022)
4.4	Titan Medical Inc. Employee Share Purchase Plan dated June 8, 2022 (incorporated by reference from Exhibit 99.1 to the Company's Form 6-K filed on September 9, 2022)
5.1	Opinion of Borden Ladner Gervais LLP
23.1	Consent of Borden Ladner Gervais LLP (Included in Exhibit 5.1)
23.2	Consent of BDO Canada LLP, Chartered Professional Accountants and Licensed Public Accountants
24.1	Power of Attorney (See Signature Pages)
107	Filing Fee Table

Item 9. **Undertakings.**

(a) The Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this Registration Statement;

provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference into this Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act that is incorporated by reference in this Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in such Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Toronto, Province of Ontario, Canada on September 15, 2022.

TITAN MEDICAL INC.

/s/ Stephen Lemieux
Name: Stephen Lemieux
Title: Chief Financial Officer
(Principal Financial Officer)

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Paul Cataford and Stephen Lemieux as his attorney-in-fact, with the power of substitution, for them in any and all capacities, to sign any amendments to this Registration Statement, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that said attorneys-in-fact, or their substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the date indicated.

Signature	**Title**	**Date**
/s/ Cary G. Vance Cary G. Vance	President & Chief Executive Officer and Director (Principal Executive Officer)	September 15, 2022
/s/Stephen Lemieux Stephen Lemieux	Chief Financial Officer (Principal Financial Officer)	September 15, 2022
/s/ Paul Cataford Paul Cataford	Chairman	September 15, 2022
/s/ Anthony J. Giovinazzo Anthony J. Giovinazzo	Director	September 15, 2022
/s/ Heather Knight Heather Knight	Director	September 15, 2022
/s/ Cathy Steiner Cathy Steiner	Director	September 15, 2022

AUTHORIZED REPRESENTATIVE IN THE UNITED STATES

/s/ Cary G. Vance Cary G. Vance	Authorized Representative in the United States	September 15, 2022

Exhibit 5.1

Borden Ladner Gervais LLP
Bay Adelaide Centre, East Tower
22 Adelaide Street West
Toronto, ON, Canada M5H 4E3
T 416.367.6000
F 416.367.6749
blg.com

Borden Ladner Gervais

September 15, 2022

Titan Medical Inc.
76 Berkeley Street
Toronto, Ontario
Canada M5A 2W7

Dear Sirs/Mesdames:

Re: Titan Medical Inc. – Registration Statement on Form S-8

We have acted as Ontario legal counsel to Titan Medical Inc. (the "**Corporation**") in connection with the preparation of a Registration Statement on Form S-8 (the "**Registration Statement**") under the United States Securities Act of 1933, as amended (the "**Act**"), relating to: (i) the potential issuance and sale by the Corporation, from time to time, of up to 16,214,640 common shares of the Corporation (the "**Shares**") issuable upon: (A) the exercise of options (the "**Options**") granted or issued under the Titan Medical Inc. Stock Option Plan, as amended and restated effective as of June 9, 2021 (the "**Plan**"); (B) the exercise or settlement of awards granted under the Titan Medical Inc. Deferred Share Unit Plan, as amended and restated effective as of June 8, 2022 (the "**DSU Plan**"); (C) the exercise or settlement of awards granted under the Titan Medical Inc. Share Unit Plan, as amended and restated effective as of June 8, 2022 (the "**SU Plan**"); and (D) the exercise or settlement of awards granted under the Titan Medical Inc. Employee Share Purchase Plan, effective as of June 8, 2022 (the "**ESPP**"); and (ii) the registration of the reoffer and resale on a continuous or delayed basis of up to 9,322,819 common shares of the Corporation previously issued and underlying stock options and restricted share units previously granted under the Plan and SU Plan prior to the filing of the Registration Statement (the "**Resale Shares**").

We have examined originals or copies, certified or otherwise to our satisfaction of such documents and considered such questions of law as we considered necessary as a basis for our opinion, including the Plan, the DSU Plan, the SU Plan, the ESPP and resolutions of the board of directors of the Corporation approving the filing of the Registration Statement. In all such examinations, we have assumed (i) the genuineness of all signatures, the legal capacity of all individuals signing any documents, the authenticity of all documents submitted to us as originals, the conformity to authentic original documents of all documents submitted to us as copies, whether facsimile, photostatic, electronic, certified or otherwise, and (ii) the truthfulness of all facts set forth in the public records and in certificates of public officials.

Our opinion herein is limited to the laws of the Province of Ontario and the federal laws of Canada applicable therein.

Borden Ladner Gervais LLP
Bay Adelaide Centre, East Tower
22 Adelaide Street West
Toronto, ON, Canada M5H 4E3
T 416.367.6000
F 416.367.6749
blg.com

Borden Ladner Gervais

Based on and subject to the foregoing, and provided that all necessary corporate action has been taken by the Corporation to authorize each issuance of the Options and the issuance of Shares upon the due exercise of the Options in accordance with the terms and conditions of the Plan, we are of the opinion that upon issuance of Shares upon the valid exercise of Options in accordance with the terms of the Plan, including, in each case, receipt by the Corporation of payment in full for the Shares in respect of which such Options are exercised, as the case may be, such Shares will be validly issued as fully paid and non-assessable Shares. Provided that all necessary corporate action has been taken by the Corporation to authorize awards granted under the DSU Plan, the SU Plan or the ESPP and the issuance of Shares which may be the subject of such awards, we are of the opinion that upon issuance of Shares underlying awards granted in accordance with the terms of the DSU Plan, the SU Plan or the ESPP, in each case, such Shares will be validly issued as fully paid and non-assessable Shares. Provided that all necessary corporate action has been taken by the Corporation to authorize previous awards granted and outstanding under the Plan and SU Plan and the issuance of the Resale Shares which are subject of such outstanding awards, we are of the opinion that upon issuance of the Resale Shares underlying such outstanding awards in accordance with the terms of the Plan and SU Plan, in each case, such Resale Shares will be validly issued as fully paid and non-assessable. Provided that all necessary corporate action has been taken by the Corporation to authorize previous awards granted under the Plan and SU Plan, the issuance of the Resale Shares which were subject of such awards and that such Resale Shares were issued in accordance with the terms of the Plan and SU Plan, we are of the opinion that such Resale Shares are validly issued as fully paid and non-assessable.

We hereby consent to the use of our name in, and the filing of this opinion as an exhibit to, the Registration Statement and hereby consent to the use of our name appearing under the heading "Legal Matters" in the reoffer prospectus contained in the Registration Statement. In giving such consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Act.

Yours truly,

/ s / Borden Ladner Gervais LLP

Exhibit 23.2

Consent of Independent Registered Public Accounting Firm

Titan Medical Inc.
Toronto, Canada

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 being filed by Titan Medical Inc. (the "Company") with the United States Securities and Exchange Commission (the "S-8") of our report dated March 23, 2022, related to the consolidated statements of financial position of the Company as of December 31, 2021 and 2020, the related consolidated statements of net and comprehensive loss, shareholders' equity, and cash flows for the years ended December 31, 2021, 2020 and 2019, and the related notes, which appear in the Company's Annual Report on Form 20-F for the year ended December 31, 2021.

We also consent to the reference to us under the heading "Experts" in the S-8.

/s/BDO Canada LLP

BDO Canada LLP
Toronto, Canada

September 15, 2022

Exhibit 107

Calculation of Filing Fee Tables

FORM S-8

(Form Type)

TITAN MEDICAL INC.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title[1]	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Fees to Be Paid	Equity	Common Shares, no par value, that may be issued pursuant to future grants under (i) the Titan Medical Inc. Stock Option Plan, as amended and restated effective as of June 9, 2021; (ii) the Titan Medical Inc. Deferred Share Unit Plan, as amended and restated effective as of June 8, 2022; (iii) the Titan Medical Inc. Share Unit Plan, as amended and restated effective as of June 8, 2022; and (iv) the Titan Medical Inc. Employee Share Purchase Plan, dated June 8, 2022	Rule 457(c) and Rule 457(h)	16,214,640[2]	$0.4705	$7,628,988[3]	$0.0000927	$707.21
	Equity	Common Shares, no par value, that may be issued pursuant to existing grants under the Titan Medical Inc. Stock Option Plan, as amended and restated effective as of June 9, 2021 and registered for resale	Rule 457(h)	4,247,905[4]	$0.90	$3,823,115[5]	$0.0000927	$354.40
	Equity	Common Shares, no par value, that may be issued pursuant to existing grants under the Titan Medical Inc. Share Unit Plan, as amended and restated effective as of June 8, 2022 and registered for resale	Rule 457(c) and Rule 457(h)	4,903,377[6]	$0.4705	$2,307,039[7]	$0.0000927	$213.86
Fees Previously Paid	-	-	-	-	-	-	-	-
	Total Offering Amounts					$13,748,582		$1,275.47
	Total Fees Previously Paid							$0
	Total Fee Offsets							$1,275.47
		Net Fee Due						$0

(1) This registration statement covers, in addition to the number of common shares of Titan Medical Inc. (the "**Company**", the "**Registrant**", "**we**" , "**us**" or "**our**"), no par value (the "**Common Shares**"), stated above, pursuant to Rule 416(c) under the Securities Act of 1933, as amended (the "**Securities Act**"), an additional indeterminate number of Common Shares that may be offered or issued as a result of one or more adjustments under the Titan Medical, Inc. Stock Option Plan (Amended and Restated Effective June 9, 2021) (the " **Stock Option Plan**") to prevent dilution resulting from one or more stock splits, stock dividends or similar transactions, the Titan Medical Inc. Share Unit Plan, as amended and restated effective as of June 8, 2022 (the "**Share Unit Plan**"), the Titan Medical Inc. Deferred Share Unit Plan, as amended and restated effective as of June 8, 2022 (the "**Deferred Share Unit Plan**"), the Titan Medical Inc. Employee Share Purchase Plan, dated June 8, 2022 (the "**Employee Share Purchase Plan**" and together with the Stock Option Plan, Share Unit Plan, Deferred Share Unit Plan and Employee Share Purchase Plan, the "**Plans**").

(2) Represents Common Shares available or reserved for future issuance under the Plans.

(3) Estimated in accordance with Rule 457(c) and Rule 457(h) under the Securities Act solely for the purpose of calculating the registration fee on the basis of 16,214,640 Common Shares issuable or reserved under the Plans multiplied by the average of the high and low prices for the Common Shares as reported on the NASDAQ Capital Market ("**Nasdaq**") under the symbol "TMDI" on September 9, 2022.

(4) Represents Common Shares subject to outstanding stock options previously granted under the Stock Option Plan and registered for resale.

(5) Estimated in accordance with Rule 457(h) under the Securities Act solely for the purpose of calculating the registration fee on the basis of the weighted average exercise price of $0.90 per share of outstanding stock options as of August 31, 2022.

(6) Represents Common Shares underlying outstanding restricted share units previously granted under the Share Unit Plan and registered for resale.

(7) Estimated in accordance with Rule 457(c) and Rule 457(h) under the Securities Act solely for the purpose of calculating the registration fee on the basis of 4,903,377 Common Shares issuable or reserved under the Share Unit Plan multiplied by the average of the high and low prices for the Common Shares as reported on Nasdaq under the symbol "TMDI" on September 9, 2022.

Table 2: Fee Offset Claims and Sources

	Registrant or Filer Name	Form or Filing Type	File Number	Initial Filing Date	Filing Date	Fee Offset Claimed	Security Type Associated with Fee Offset Claimed	Security Title Associated with Fee Offset Claimed	Unsold Securities Associated with Fee Offset Claimed	Unsold Aggregate Offering Amount Associated with Fee Offset Claimed	Fee Paid with Fee Offset Source
						Rule 457(p)					
Fees Offset Claims	Titan Medical Inc.	F-3	333-232898(3)	July 30, 2019		$1,275.47	Unallocated (Universal) Shelf	Unallocated (Universal) Shelf	Unallocated (Universal) Shelf	$10,523,699.68	
Fees Offset Sources	Titan Medical Inc.	F-3	333-232898(3)		July 30, 2019						$15,150

(1) Attributable to US$10,523,699.68 of unsold securities (US$1,275.47 of previously paid fees) that were previously registered under the Registration Statement on Form F-3 (333-232898) on July 30, 2019 (the "**Prior Registration Statement**") that have not yet been issued and sold. Pursuant to Rule 457(p) under the Securities Act, such unutilized filing fees may be applied to the filing fees payable pursuant to this Registration Statement, and the Prior Registration Statement and the offering of the unsold securities registered under the Prior Registration Statement will be deemed terminated as of the effective date of this Registration Statement.