Medtronic

Targeted drug delivery, evolved

Simple[1], safe[8], and effective[12] intrathecal therapy for **chronic pain and cancer pain** made possible by the SynchroMed™ III implantable infusion system



SynchroMed™ III
implantable infusion system

Redesigned for peace of mind

Equipped with durable design updates

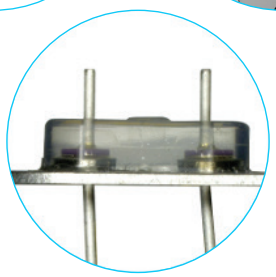
2011
Battery coating added

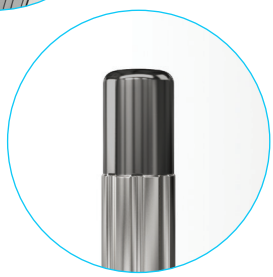




2015
Gear wheel 3 material change

2015
Feedthroughs encapsulated

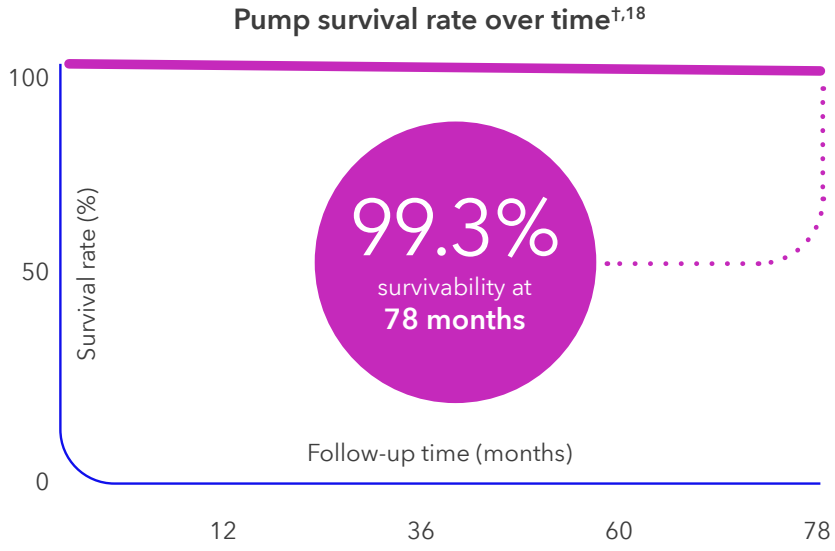




2017
Diamond-like carbon (DLC) coating added

Enhanced for reliability

Let the data do the talking



†This data represents pumps with four durable design changes (battery coating, gear wheel 3 material change, feedthrough encapsulation, diamond- like carbon coating). **The most recent design change was implemented in 2017. At 78 months, the survival probability (95% confidence interval of 85.4-88.1%) was 86.8% pump survival pre-enhancements (n=1036 pumps); and 99.3% post-durable enhancements (95% confidence interval of 98.7-99.7%, n=50 pumps).[18,19]**

The next generation SynchroMed™ implantable infusion system

Updated electronics[20]

New chipset and firmware allow end-to-end cybersecurity controls and an upgradeable platform.

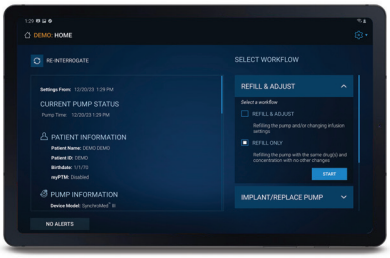


Proven performance[18]

Reliability by design with proven durable design enhancements from the SynchroMed™ II infusion pump.

Updated programming[20]

Refill Only workflow enables a shorter and more consistent update duration.



The SynchroMed™ **clinician programmer**§ provides simple, guided "Refill & Adjust" and "Refill Only"† workflows for enhanced programming.‡



The myPTM™ **personal therapy manager**◊ helps patients alleviate unpredictable chronic pain.‡,[17]

†The **Refill Only** workflow is compatible with only the SynchroMed™ III implantable infusion system.

‡The SynchroMed™ clinician programmer, and the myPTM™ personal therapy manager are compatible with both the SynchroMed™ III and SynchroMed™ II pumps.

§Licensed as SynchroMed Clinician Programmer Application.

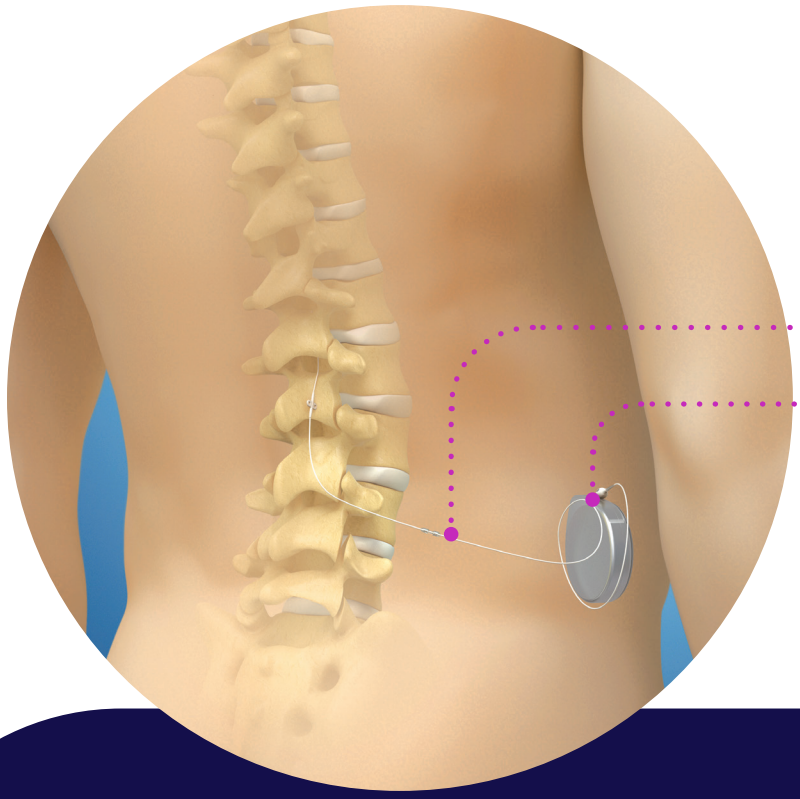
◊Licensed as MyPTM Application.

Why targeted drug delivery?

Greater efficacy, fewer side effects, and a high degree of clinician control[1,2,3]

Millions are affected by pain and healthcare providers often prescribe systemic opioids (typically oral) as part of the treatment plan.[4] This is common, despite limited evidence on the benefits of long-term systemic opioid therapy and evidence that long-term systemic opioid therapy is associated with increased risk for opioid misuse or abuse.[5]

Giving clinicians control over medication administration is increasingly important given the prevalence of medication abuse, misuse, overdose, and addiction.[6,7] Targeted drug delivery is effective in reducing or eliminating the need for systemic opioids when used to treat both malignant and nonmalignant pain.[8,9]



How targeted drug delivery may benefit your patients

- **Achieve pain relief** with lower doses, more effectively[1,10]
- **Fewer side effects** compared to oral medications[1,2]

Chronic Pain

- **43–51% of patients completely eliminate systemic opioids** at 12 months[8,11]
- **99% of chronic nonmalignant pain patients** choose to replace the pump[12]
- **90% of patients would recommend therapy** to a family member or friend[13]

Cancer Pain

- **94% reduction** in mean systemic opioid dose[9]
- **Sustained pain relief and improved quality of life**[14,15]
- **Reduced cost burden compared with patients treated by conventional medical management (CMM)**[16]

Allows **full-body 1.5 and 3T MRI† scans** under specific conditions

†Under specific conditions. Refer to product labeling for full list of conditions.

More efficacy with less medication[8]

Intrathecal drug delivery enables reduced drug dosages compared to other routes of administration.[8]



Oral medication

Intrathecal medication

References
1. Hamza M, Doleys D, Wells M, et al. Prospective study of 3-year follow-up of low-dose intrathecal opioids in the management of chronic nonmalignant pain. *Pain Med*. 2012;13(10): 1304-1313.
2. Smith TJ, Coyne PJ, Staats PS, Deer T, Stearns LJ, Rauck RL, Boortz-Marx RL, Buchser E, Català E, Bryce DA, Cousins M, Pool GE. An implantable drug delivery system (IDDS) for refractory cancer pain provides sustained pain control, less drug-related toxicity, and possibly better survival compared with comprehensive medical management (CMM). *Ann Oncol*. 2005 May;16(5):825-33.
3. Pope JE, Deer TR, Amirdelfan K, McRoberts WP, Azeem N. The Pharmacology of Spinal Opioids and Ziconotide for the Treatment of Non-Cancer Pain. *Curr Neuropharmacol*. 2017;15(2):206-216.
4. Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research. (National Academies Press, 2011). doi:10.17226/13172.
5. Chou, R et al. The Effectiveness and Risks of Long-Term Opioid Treatment of Chronic Pain. Evidence report/technology assessment. 1–219 (2014) doi:10.23970/ahrqepcerta218.
6. Substance Abuse and Mental Health Services Administration. (2023). Key substance use and mental health indicators in the United States: Results from the 2023 National Survey on Drug Use and Health. HHS Publication No.PEP24-07-021-2024, NSDUH Series H-57. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data/sites/default/files/reports/rpt47095/National%20Report/National%20Report/2023-nsduh-annual-national.pdf. Accessed April 2025.
7. Vowles KE, McEntee ML, Julnes PS, et al. Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis. *Pain*. 2015;156(4):569-576.
8. Hatheway J.A., Bansal M., Nichols-Ricker C.I. 2020. Systemic Opioid Reduction and Discontinuation Following Implantation of Intrathecal Drug-Delivery Systems for Chronic Pain: A Retrospective Cohort Analysis. *Neuromodulation*. 2020; 23: 961–969.
9. Sindt, J, Odell, D, Dalley, A & Brogan, S. Initiation of Intrathecal Drug Delivery Dramatically Reduces Systemic Opioid Use in Patients With Advanced Cancer. Neuromodulation: *Journal of the International Neuromodulation Society*. 23, 978–983 (2020).
10. Smith TJ, Swainey C, Coyne PJ. Pain management, including intrathecal pumps. Curr Pain Headache Rep. 2005 Aug;9(4):243-8.
11. Hatheway JA, et al. Systemic opioid elimination after implantation of an intrathecal drug delivery system significantly reduced health-care expenditures. *Neuromodulation*. 2015 Apr;18(3):207-13.
12. Schultz DM, Abd-Elsayed, A., et al. Targeted Drug Delivery for Chronic Nonmalignant Pain: Longitudinal Data From the Product Surveillance Registry. *Neuromodulation*. 2021 Oct; 24(7):1167–1175.
13. Deer T, Chapple I, Classen A, et al. Intrathecal drug delivery for treatment of chronic low back pain: report from the National Outcomes Registry for Low Back Pain. *Pain Med*. 2004;5(1):6-13.
14. Perruchoud et al. Management of Cancer-Related Pain With Intrathecal Drug Delivery: A Systematic Review and Meta-Analysis of Clinical Studies. *Neuromodulation*. 2022; S1094-7159(21)06969-5.
15. Stearns et al. Intrathecal Drug Delivery Systems for Cancer Pain: An Analysis of a Prospective, Multicenter Product Surveillance Registry. *Anesth Analg*. 2020; 130(2):289-297.
16. Stearns et al. Assessment of Health Care Utilization and Cost of Targeted Drug Delivery and Conventional Medical Management vs Conventional Medical Management Alone for Patients With Cancer-Related Pain. *JAMA Netw Open*. 2019; 2(4):e191549.
17. Bolash, Niazi, Kumari, Azer, Mekhail. Pain Pract. Efficacy of a Targeted Drug Delivery on-Demand Bolus Option for Chronic Pain. 2018 Mar;18(3):305-313.
18. 2024 TDD Product Performance Report; https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/products/neurological/product-performance-report-targeted-drug-delivery.pdf.
19. Data obtained from PSR AD Hoc Statistical Report 2025 July 8. Pre-enhancement Survival ID878.
20. Medtronic data on file.

Medtronic

99 Hereford Street
Brampton, Ontario, L6Y 0R3
Toll-free: 800.268.5346
Tel: 905.460.3800

medtronic.ca

For a listing of indications, contraindications, precautions, warnings, and potential adverse events, please refer to the Instructions for Use.

©2026 Medtronic. All rights reserved. Medtronic, Medtronic logo and Engineering the extraordinary are trademarks of Medtronic. ™*Third party brands are trademarks of their respective owners. All other brands are trademarks of a Medtronic company.
US-NEU-2500760EC CA-NM-0075-E Rev. 09/2026