RonanRx
PERSONALIZED MEDICINE

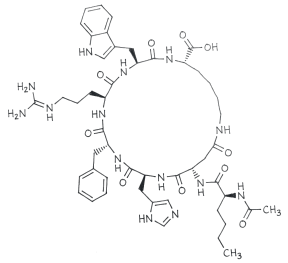
CLINICAL MONOGRAPH · SEXUAL HEALTH

Bremelanotide / PT-141

Melanocortin receptor agonist, FDA-approved as Vyleesi

Bremelanotide, sold as Vyleesi, is an injection used to treat low sexual desire (hypoactive sexual desire disorder, HSDD) in premenopausal women [fda_label_vyleesi; kingsberg2019]. The FDA approved it in June 2019. It is taken as needed before anticipated sexual activity, not every day.

Bremelanotide works on a brain pathway called the melanocortin system, which helps regulate sexual arousal in the hypothalamus. This is a different mechanism from PDE-5 inhibitors like sildenafil (Viagra), which act on blood flow rather than the brain. The most common side effects are nausea (about 40% of women), facial flushing, and a small, short-lived increase in blood pressure after each dose. Because of the blood-pressure effect, it is not used in people with uncontrolled high blood pressure or known cardiovascular disease.



EVIDENCE POSTURE FDA APPROVED EMERGING REVIEWED **2026-05-11**

State-licensed 503A | Pharmacist reviewed | Doctor led | Cold-chain ready | Patient choice preserved

Contents

Click any section to jump there. Page numbers update on render.

FOR CLINICIANS

Bremelanotide is a cyclic heptapeptide melanocortin receptor agonist FDA-approved as Vyleesi (June 2019) for acquired, generalized hypoactive sexual desire disorder (HSDD) in premenopausal women. The molecule is a non-selective agonist at MC1R, MC3R, MC4R, and MC5R, with central effects on sexual desire and arousal attributed primarily to MC4R and MC3R activity in the hypothalamus and brainstem [pfaus2007, vanderploeg2002]. Discovered as a synthetic metabolite of melanotan II and originally developed by Palatin Technologies (later licensed to AMAG Pharmaceuticals), bremelanotide was pursued first for erectile dysfunction via the intranasal route before that program was halted in 2008 over transient hypertension during the male-ED studies [diamond2004, rosen2004].

Phase 3 evidence for the approved indication comes from RECONNECT, two identically designed, randomized, double-blind, placebo-controlled trials (Studies 301 and 302) in 1,247 premenopausal women with HSDD, with results reported by Kingsberg et al. (2019) [kingsberg2019] and long-term open-label safety/efficacy data by Simon et al. (2019) [simon2019]. Both trials met co-primary endpoints on the Female Sexual Function Index (FSFI) desire subscale and the Female Sexual Distress Scale-Desire/Arousal/Orgasm (FSDS-DAO) item 13. Pre-specified subgroup analyses [simon2022] and an integrated safety analysis across the clinical development program [clayton2022] support the labeled population. Independent re-analyses [spielmans2021, spielmans2024] have argued that effect sizes on patient-meaningful endpoints (sexually satisfying events) are small and that the regulatory claim outpaces clinical magnitude, a critique RonanRx considers when counseling patients. Safety is dominated by nausea (40% in pooled phase 3), flushing (20%), injection-site reactions, headache, and transient post-dose blood-pressure elevation with reflex bradycardia [fda_label_vyleesi, clayton2022]. Focal hyperpigmentation has been reported with repeated dosing, attributable to MC1R activity. Compounded preparations for off-label male ED rely on a small, dated trial corpus [diamond2004, rosen2004, safarinejad2008] and are not supported by a 503A-grade evidence base.

Why Personalized Bremelanotide / PT-141

Vyleesi is sold as one product: a 1.75 mg subcutaneous autoinjector, one dose per 24 hours, no more than eight doses per month. That fixed dose came out of the RECONNECT trials, which enrolled premenopausal women with HSDD and reported nausea in roughly 40 percent of subjects, flushing in 20 percent, and a transient post-dose blood-pressure bump in almost everyone. The label was set for that average. It was not set for your tolerance to nausea, your baseline blood pressure, your weight, the medications you take that already nudge your heart rate, or whether you are male and have been prescribed this for a different indication than the one the FDA reviewed.

A compounding pharmacy fills the gap that one-dose, one-autoinjector packaging leaves open. The molecule is the same heptapeptide the FDA reviewed; what changes is everything around it. A prescriber who knows your chart can start at a fraction of the labeled 1.75 mg, titrate up only if the first dose is tolerated, or cap your monthly count below eight if nausea or pressure response says so. Vial-and-syringe presentations let a patient draw a smaller dose than the autoinjector physically allows. None of that is exotic. It is what the prescription, the pharmacist, and the patient-specific order were originally for.

This is the older arrangement that pre-dates mass manufacturing: a doctor writes the order, a pharmacist prepares it for one named patient, and the dose belongs to that patient. Modern 503A oversight keeps it honest.

Quick Facts About Bremelanotide / PT-141

Category: Cyclic heptapeptide melanocortin receptor agonist (non-selective; MC1R, MC5R, with relevant central activity at MC3R and MC4R)

Active ingredient: Bremelanotide acetate, a synthetic analog of α-melanocyte-stimulating hormone (α-MSH); a metabolite of the earlier compound melanotan II

FDA-approved branded form: Vyleesi (bremelanotide 1.75 mg subcutaneous autoinjector), FDA-approved June 2019 for acquired, generalized hypoactive sexual desire disorder (HSDD) in premenopausal women

Route: Subcutaneous injection, as-needed (approximately 45 minutes before anticipated sexual activity); not for chronic daily use

Evidence posture: Phase 3 RECONNECT trials [kingsberg2019] supported FDA approval of Vyleesi for premenopausal HSDD. Earlier intranasal and subcutaneous trials in male erectile dysfunction [diamond2004, rosen2004, safarinejad2008] did not progress to approval after the intranasal formulation was discontinued for blood-pressure effects.

FDA-approval status: Vyleesi is FDA-approved for premenopausal HSDD. Compounded bremelanotide preparations are not FDA-approved.

Boxed/major warnings: Transient increases in blood pressure and decreases in heart rate after each dose; contraindicated in uncontrolled hypertension and known cardiovascular disease per the Vyleesi label.

Compounded under: 503A, patient-specific prescription only, when the manufactured Vyleesi autoinjector cannot meet a documented clinical need

Important compounding caution: Bremelanotide is widely marketed online as a 'research peptide' and is heavily used off-label for male erectile dysfunction. Off-label male ED use is supported by weak, predominantly small randomized evidence [diamond2004, rosen2004, diamond2005, safarinejad2008] and was the indication abandoned by the developer when intranasal trials were halted for hypertension. RonanRx compounds bremelanotide only on a patient-specific prescription with documented medical need, not as a direct-to-consumer 'libido' or 'tanning peptide' product.

> **SPECIALS: PATIENT-SPECIFIC PRESCRIPTION ONLY**
>
> Bremelanotide / PT-141 described in this monograph is a 503A compounded preparation. Every dose is made on a prescription, for a named patient, by a licensed pharmacist. It is not a stocked, mass-manufactured product.
>
> - **Made to order, not off a shelf.** No batch sits in a warehouse waiting for buyers. Your prescription triggers the prep.
> - **Named-patient label.** The bottle carries one patient's name. The batch records carry one prescription.
> - **Dose, strength, and route chosen for the patient.** A prescriber decides what gets compounded, not a manufacturer who set the strength for a trial population.
> - **Licensed pharmacist on the hook.** A real person, with a license that can be pulled, signs off on every prep. State inspectors check the facility.
> - **Compounded drugs are not FDA-approved.** They should not be evaluated using branded-drug trial data alone. Availability varies by state and prescribed medication.

How This Differs from a Research-Use-Only Website

A research-use-only website ships a vial from a warehouse. There is no prescription, no pharmacist, no facility inspection, and no way to recall the product if something is wrong with it. If the vial is mislabeled, contaminated, or under-potent, there is nobody whose license is at stake.

A 503A compounding pharmacy is the other thing. The doctor writes the prescription. A licensed pharmacist, whose name is on the label, prepares the medicine in a facility the state inspects. If something goes wrong, there is a person and a license on the hook, and a documented chain of custody on every lot. That accountability is what makes it safe.

What is Bremelanotide / PT-141?

Bremelanotide is a cyclic seven-amino-acid peptide (Ac-Nle-cyclo[Asp-His-D-Phe-Arg-Trp-Lys]-OH) that is a synthetic analog of α-melanocyte-stimulating hormone (α-MSH). It is the active metabolite of an earlier compound, melanotan II, originally synthesized in the 1990s in academic and industry programs investigating melanocortin pharmacology for skin pigmentation and sexual function. Bremelanotide is a non-selective agonist at the melanocortin receptors MC1R, MC3R, MC4R, and MC5R, with the central sexual effects attributed predominantly to MC4R and MC3R [vanderploeg2002; pfaus2007].

The molecule was developed by Palatin Technologies; commercial-development rights for the female sexual dysfunction indication were licensed to AMAG Pharmaceuticals, which carried the product through FDA approval as Vyleesi in June 2019. Vyleesi is supplied as a single-dose, single-use 1.75 mg subcutaneous autoinjector. It is administered subcutaneously in the abdomen or thigh approximately 45 minutes before anticipated sexual activity, with no more than one dose per 24-hour period and no more than eight doses per month per labeling [fda_label_vyleesi].

How Bremelanotide / PT-141 Works

Bremelanotide activates the central melanocortin system, a neuropeptide network that links hypothalamic energy-balance and arousal circuits. Within this system, MC4R is densely expressed in hypothalamic nuclei (paraventricular nucleus, medial preoptic area) and brainstem regions implicated in sexual desire and arousal; MC3R has overlapping but distinct distribution [vanderploeg2002, pfaus2009]. Stimulation of MC4R in the medial preoptic area is sufficient to elicit proceptive sexual behavior in female rats and to enhance penile erection in male animal models [rossler2006, pfaus2004, wessells2000].

Mechanistically, bremelanotide acts upstream of the dopaminergic and oxytocinergic outputs that mediate sexual desire and arousal, distinct from the peripheral nitric-oxide / cGMP / smooth-muscle relaxation mechanism of PDE-5 inhibitors such as sildenafil and tadalafil. This pharmacology is the basis for the brand positioning of Vyleesi: a central, on-demand pharmacotherapy for desire rather than a peripheral vasodilator for erectile function [pfaus2022, kingsberg2019].

Non-selectivity across the melanocortin receptor family accounts for several characteristic adverse effects. MC1R activity in epidermal melanocytes drives the focal hyperpigmentation and (in earlier melanotan analogs) the global tanning effect; sympathetic outflow contributes to the transient post-dose blood-pressure elevation and reflex bradycardia [fda_label_vyleesi, clayton2022].

Biological Role of Bremelanotide / PT-141

The melanocortin system is one of the central regulators of energy balance, autonomic function, skin pigmentation, and sexual behavior. α-MSH released from POMC neurons in the arcuate nucleus of the hypothalamus acts on downstream MC4R-expressing neurons in the paraventricular nucleus to suppress food intake; the same circuit and adjacent melanocortin-responsive neurons in the medial preoptic area contribute to female sexual proceptive behavior and to male erectile function [vanderploeg2002, pfaus2007].

α-MSH and the related melanocyte-stimulating hormones also bind MC1R on epidermal melanocytes, driving eumelanin synthesis (skin tanning and focal hyperpigmentation). MC2R is the ACTH receptor (cortisol regulation); MC3R contributes to energy and behavioral regulation; MC5R has exocrine-gland and immune functions. Non-selective melanocortin agonists like bremelanotide engage all of these receptors, which explains the dermatologic and autonomic adverse effects seen alongside the desired central sexual effects [pfaus2022, fda_label_vyleesi].

Detailed Mechanism of Bremelanotide / PT-141

The melanocortin system comprises five GPCRs (MC1R, MC5R), the endogenous agonists α-, β-, and γ-MSH and ACTH derived from POMC processing, and the endogenous inverse agonists agouti and AgRP. MC4R, a Gs-coupled receptor signaling through cAMP, is highly expressed in the paraventricular nucleus of the hypothalamus, lateral hypothalamus, medial preoptic area, and dorsal vagal complex, circuits that integrate appetite, autonomic outflow, and reproductive behavior [vanderploeg2002]. Genetic loss-of-function variants in MC4R produce hyperphagic obesity in humans and rodents, and pharmacological activation of MC4R in animal models facilitates penile erection and lordosis/solicitation behavior in females, providing the translational rationale for melanocortin sexual pharmacology [vanderploeg2002, pfaus2004, rossler2006].

Preclinical pharmacology of bremelanotide and its parent compound melanotan II established proof of concept in this domain. Pfaus and colleagues showed selective facilitation of sexual solicitation in female rats following melanocortin receptor agonism [pfaus2004], with downstream dopaminergic and oxytocinergic mediation [shadiack2007, pfaus2007]. Rössler et al. (2006) demonstrated melanotan II-induced proceptive behaviors in female rats independent of overt locomotor effects [rossler2006]. Wessells et al. (2000) reported that an α-MSH analog produced penile erection and increased sexual desire in men with organic erectile dysfunction in an early proof-of-concept human study [wessells2000].

In healthy adults, intranasal bremelanotide (the discontinued formulation) produced increases in penile rigidity and self-reported sexual desire in men with erectile dysfunction [diamond2004, diamond2005, rosen2004]. The intranasal program was halted in 2008 after dose-dependent transient blood-pressure

elevations in male-ED studies precluded a path to approval [diamond2004, rosen2004]. Development pivoted to subcutaneous administration in women with HSDD, building on dose-finding data from Clayton et al. (2016) [clayton2016] that established the 1.75 mg subcutaneous dose carried into RECONNECT phase 3 [kingsberg2019]. The neurobiology of bremelanotide for the approved female-HSDD indication is reviewed in Pfaus et al. (2022) [pfaus2022].

Pharmacokinetically, subcutaneous bremelanotide reaches peak plasma concentration approximately 1 hour after dosing, with a terminal elimination half-life of 2.7 hours; clearance is renal. The drug is administered on demand because of its short half-life and the autonomic side-effect profile, rather than chronically [fda_label_vyleesi]. The autoinjector delivers a single 1.75 mg dose. Spana et al. (2022) reported weight-reduction effects in two phase 1 studies in obese women with chronic daily dosing of bremelanotide [spana2022], a separate pharmacology program that did not progress to a weight indication.

Bremelanotide / PT-141 Research History

Bremelanotide's lineage begins with melanotan II, a non-selective superpotent α-MSH analog synthesized by the Hadley group at the University of Arizona in the 1980s and 1990s for studies of melanocortin pharmacology, originally as a candidate sunless-tanning agent [fda_label_vyleesi]. Early clinical observation that melanotan II produced sexual side effects (spontaneous erections, increased libido) motivated systematic investigation of melanocortins in sexual function. Wessells et al. (2000) provided the first proof of concept in men with organic erectile dysfunction using a related α-MSH analog [wessells2000]. Van der Ploeg et al. (2002) established MC4R as the principal receptor mediating the sexual-function effects of melanocortin agonists [vanderploeg2002]. Pfaus and colleagues extended this work into preclinical models of female sexual behavior [pfaus2004; rossler2006; pfaus2007].

Palatin Technologies developed bremelanotide as the active metabolite of melanotan II for clinical use. Intranasal bremelanotide was studied for male erectile dysfunction in early-phase trials [diamond2004] showing pharmacodynamic erectogenic activity and additive effect with sildenafil [diamond2004, rosen2004, diamond2005]. Safarinejad and Hosseini (2008) reported a randomized placebo-controlled study of intranasal bremelanotide in men who had failed sildenafil [safarinejad2008] [fda_label_vyleesi]. The intranasal male-ED program was halted in 2008 after transient blood-pressure elevations were judged to preclude a path to approval [diamond2004, rosen2004].

Subcutaneous dosing for female sexual dysfunction was advanced as the next program. Clayton et al. (2016) reported a phase 2b dose-finding randomized trial of subcutaneous bremelanotide in premenopausal women with female sexual dysfunctions, establishing the 1.75 mg dose carried into phase 3 [clayton2016]. The two pivotal trials, RECONNECT Study 301 and Study 302, were identical in design, randomized 1,247 premenopausal women with acquired, generalized HSDD to subcutaneous bremelanotide 1.75 mg as needed vs placebo over 24 weeks, and met co-primary endpoints on the FSFI desire subscale and the FSDS-DAO item 13 [kingsberg2019]. A long-term safety/efficacy open-label extension to 52 weeks supported the

chronic-use posture [simon2019]. AMAG Pharmaceuticals received FDA approval for Vyleesi on June 21, 2019, for acquired, generalized HSDD in premenopausal women [fda_label_vyleesi]. Pre-specified subgroup analyses [simon2022] and an integrated safety analysis [clayton2022] were published subsequently. Independent re-analyses [spielmans2021, spielmans2024] argued that effect sizes on patient-meaningful endpoints are small.

Bremelanotide / PT-141 Timeline

- **2000** • Wessells et al [wessells2000]. (Urology) report the first proof-of-concept for α-MSH analogs in human erectile dysfunction
- **2000** • Hadley (Annals NY Acad Sci) reviews melanotropic peptide development, including the lineage leading to bremelanotide
- **2002** • Van der Ploeg et al [vanderploeg2002]. (PNAS) establish MC4R as the principal melanocortin receptor mediating sexual function
- **2004** • Diamond et al [diamond2004]. (Int J Impotence Res) report phase 1 intranasal PT-141 (bremelanotide) safety, PK, and PD in healthy men and men with erectile dysfunction
- **2004** • Rosen et al [rosen2004]. (Int J Impotence Res) report phase 1 subcutaneous PT-141 in healthy men and men with inadequate response to sildenafil
- **2004** • Pfaus et al [pfaus2004]. (PNAS) demonstrate melanocortin receptor agonist-induced sexual solicitation in female rats
- **2005** • Diamond et al [diamond2005]. (Urology) show additive erectogenic effect of intranasal PT-141 with low-dose sildenafil in men with erectile dysfunction
- **2006** • Diamond et al [diamond2006]. (J Sex Med) report the first study of subcutaneous bremelanotide in premenopausal women with sexual arousal disorder, demonstrating an effect on subjective sexual response
- **2006** • Rössler et al [rossler2006]. (Pharmacol Biochem Behav), melanotan II enhances proceptive sexual behavior in female rats independent of locomotor effects
- **2007** • Pfaus, Giuliano, and Gelez (J Sex Med) review bremelanotide preclinical CNS effects on female sexual function [pfaus2007]
- **2007** • Shadiack, Sharma, and Earle review melanocortins in the treatment of male and female sexual dysfunction [shadiack2007]

2008 • Safarinejad and Hosseini (J Urology), intranasal bremelanotide as salvage therapy in sildenafil non-responders; intranasal male-ED development halted thereafter over blood-pressure findings [safarinejad2008]

2016 • Clayton et al [clayton2016]. (Women's Health), phase 2b dose-finding randomized trial of subcutaneous bremelanotide in premenopausal women with female sexual dysfunctions; established the 1.75 mg dose for phase 3

2017 • Clayton et al [clayton2017]. (Clinical Therapeutics), phase 1 randomized study of bremelanotide co-administered with ethanol; no clinically significant interaction

2019 • Kingsberg et al [kingsberg2019]. (Obstet Gynecol) publish RECONNECT, two identically designed phase 3 randomized double-blind placebo-controlled trials (Studies 301 and 302) of subcutaneous bremelanotide 1.75 mg in 1,247 premenopausal women with HSDD

2019 • Simon et al [simon2019]. (Obstet Gynecol) report 52-week open-label safety/efficacy extension from RECONNECT

2019 • FDA approves Vyleesi (bremelanotide 1.75 mg subcutaneous autoinjector) for acquired, generalized hypoactive sexual desire disorder in premenopausal women (June 21, 2019) [fda_label_vyleesi]

2020 • Mayer and Lynch (Ann Pharmacother), practitioner-facing summary of Vyleesi approval and clinical considerations [mayer2020]

2021 • Spielmans (J Sex Res) re-analyzes the phase 3 RECONNECT data and argues that effect sizes on sexually satisfying events are small relative to the regulatory claim [spielmans2021]

2022 • Simon et al [simon2022]. (J Women's Health), prespecified and integrated subgroup analyses from the RECONNECT phase 3 studies

2022 • Clayton et al [clayton2022]. (J Women's Health), integrated safety profile of bremelanotide across the clinical development program

2022 • Pfaus, Sadiq, and Spana (CNS Spectrums) review the neurobiology of bremelanotide for premenopausal HSDD [pfaus2022]

2022 • Spana et al [spana2022]. (Diabetes Obes Metab), two phase 1 trials of daily bremelanotide on body weight in obese women

2023 • Cipriani et al [cipriani2023]. (Expert Opin Pharmacother) evaluate bremelanotide injection for HSDD

2024 • Spielmans and Ellefson (J Sex Res), extended critique of bremelanotide phase 3 outcomes [spielmans2024]

2025 • Barakeh et al [barakeh2025]. (Ann Pharmacother) review pharmacotherapy of HSDD in premenopausal women, including the bremelanotide and flibanserin evidence base

Clinical Contexts for Bremelanotide / PT-141

Acquired, generalized hypoactive sexual desire disorder (HSDD) in premenopausal women

FDA APPROVED

FDA-approved indication for manufactured Vyleesi.

Vyleesi (bremelanotide 1.75 mg subcutaneous autoinjector) is FDA-approved for acquired, generalized HSDD in premenopausal women. Phase 3 evidence comes from RECONNECT Studies 301 and 302 [kingsberg2019], two identically designed, randomized, double-blind, placebo-controlled trials enrolling 1,247 premenopausal women with HSDD. At 24 weeks, both trials met their co-primary endpoints on the FSFI desire subscale and the FSDS-DAO item 13 [kingsberg2018; kingsberg2020]. An open-label extension to 52 weeks [simon2019] supported chronic intermittent use; pre-specified subgroup analyses [simon2022] and an integrated safety profile [clayton2022] were published subsequently. Vyleesi is not indicated in postmenopausal women or in men, and is not indicated for performance enhancement in patients without HSDD [fda_label_vyleesi]. Independent re-analyses [spielmans2021, spielmans2024] caution that effect sizes on sexually satisfying events are small.

Branded product: Vyleesi (bremelanotide injection, AMAG Pharmaceuticals)

Erectile dysfunction in men

EMERGING

Off-label; small dated phase 1/2 evidence with the discontinued intranasal formulation and limited subcutaneous data. The intranasal male-ED program was halted in 2008 over blood-pressure findings; no FDA-approved bremelanotide product exists for male ED.

Phase 1 intranasal PT-141 in men with erectile dysfunction produced dose-dependent increases in penile rigidity [diamond2004]. Phase 1 subcutaneous PT-141 in healthy men and men with inadequate response to sildenafil showed comparable PD effects [rosen2004]. Diamond et al. (2005) reported additive erectogenic effect of intranasal PT-141 combined with sub-therapeutic sildenafil [diamond2005]. Safarinejad and Hosseini (2008) reported intranasal bremelanotide as salvage therapy in 342 men who had failed sildenafil, with statistically significant but modest improvements in IIEF and successful intercourse rates [safarinejad2008]. The intranasal male-ED program was discontinued in 2008 over transient hypertension findings, and the subcutaneous program pivoted to female HSDD. Off-label use of compounded subcutaneous bremelanotide for male ED is widespread but is not supported by a 503A-grade evidence base or by an FDA-approved indication.

Female sexual arousal disorder (FSAD) in premenopausal women EMERGING

Off-label; small early-phase evidence with subcutaneous PT-141 predating the HSDD development program.

Diamond et al. (2006) reported the first study of subcutaneous bremelanotide in 18 premenopausal women with female sexual arousal disorder using a laboratory paradigm of erotic visual stimulation, demonstrating an effect on subjective sexual response measures [diamond2006]. Subsequent development consolidated around the HSDD indication, which carries the Vyleesi approval; FSAD is not a separate FDA indication for bremelanotide.

Off-Label Uses of Bremelanotide / PT-141

Male erectile dysfunction EMERGING

Widespread off-label and online use; small, dated trial evidence; the original intranasal male-ED development was halted in 2008 over blood-pressure findings.

Off-label compounded bremelanotide for male ED relies on intranasal- and subcutaneous-formulation phase 1/2 trials [rosen2004; safarinejad2008]. Effect sizes were modest, hypertension was the dose-limiting toxicity, and the developer abandoned the male-ED indication. RonanRx considers this an emerging indication with weak evidence and counsels accordingly [diamond2004; diamond2005].

Postmenopausal HSDD EMERGING

Off-label; Vyleesi is approved only in premenopausal women. No phase 3 evidence in the postmenopausal population.

The RECONNECT phase 3 program enrolled only premenopausal women, and the Vyleesi labeling restricts use to premenopausal HSDD [fda_label_vyleesi, kingsberg2019]. Use in postmenopausal women is off-label and not supported by adequate trial data; the cardiovascular-risk profile is also relatively more concerning in this population.

FDA-Approved Uses of Bremelanotide / PT-141

Brand	Indication	Year	Route
Vyleesi	Acquired, generalized hypoactive sexual desire disorder (HSDD) in premenopausal women	2019	Subcutaneous injection (single-use 1.75 mg autoinjector), as needed approximately 45 minutes before anticipated sexual activity

Vyleesi (bremelanotide injection) was approved by FDA on June 21, 2019 for the treatment of acquired, generalized hypoactive sexual desire disorder (HSDD) in premenopausal women [fda_label_vyleesi;

kingsberg2019]. 'Acquired' means HSDD that developed after a period of normal sexual function; 'generalized' means it occurs across partners and situations rather than only in specific contexts [clayton2022]. Vyleesi is not indicated for HSDD that is due to a co-existing medical or psychiatric condition, problems within a relationship, or the effect of a medication or drug substance. It is not indicated for use in postmenopausal women or in men, and it is not indicated to enhance sexual performance.

The Vyleesi label includes warnings for transient increases in blood pressure and decreases in heart rate after each dose, focal hyperpigmentation in the face, gums, and breasts (more likely with darker baseline pigmentation and with frequent dosing), and severe nausea. Vyleesi is contraindicated in patients with uncontrolled hypertension or known cardiovascular disease [fda_label_vyleesi]. The labeled regimen limits use to no more than one dose per 24-hour period and no more than eight doses per month.

Compounded Bremelanotide / PT-141 (503A)

Compounded bremelanotide is dispensed under 503A only when the prescribing clinician documents a patient-specific clinical need that the manufactured Vyleesi 1.75 mg autoinjector cannot meet [fda_label_vyleesi] [clayton2022]. Documented needs typically fall into a small number of categories: (1) the patient cannot operate the single-use autoinjector device (e.g., dexterity or visual impairment) and requires a different container closure; (2) the patient has documented excipient sensitivity to a component of the Vyleesi formulation; or (3) the prescriber documents a clinically required dose individualization outside the 1.75 mg increment, with corresponding informed-consent documentation [fda503a, fda_essentially_a_copy].

Most online and direct-to-consumer marketing of 'PT-141' positions the peptide as a libido or 'sexual wellness' enhancer for men and women without a documented HSDD diagnosis. This use is off-label, is not supported by the RECONNECT evidence base (which enrolled only premenopausal women with HSDD), and does not meet the 503A patient-specific medical-need standard. RonanRx treats compounded bremelanotide for male erectile dysfunction or for general libido enhancement as 'essentially-a-copy'-pattern use and does not fill such prescriptions absent a documented patient-specific clinical reason that the manufactured Vyleesi product is not appropriate [fda_label_vyleesi] [kingsberg2019; simon2019].

Compounded bremelanotide preparations are typically dispensed as sterile injectable solutions for subcutaneous administration [fda_label_vyleesi]. The compounded preparation is not bioequivalent to Vyleesi; clinicians and patients should understand that PK/PD characteristics, particularly the transient hypertensive response, may differ from the labeled product when concentration, excipients, or container closure differ from the reference autoinjector. The published RECONNECT phase 3 evidence base is generated with the manufactured 1.75 mg autoinjector and does not transfer to compounded preparations without separate stability, PK, and tolerability evaluation [simon2022].

Bremelanotide is not on the FDA drug shortage list [fda_label_vyleesi]. The shortage exception under section 503A(b)(1)(D) does not apply, and compounding of essentially-a-copy preparations is restricted by

the existing FDA guidance [fda_essentially_a_copy]. Bremelanotide is also widely marketed online as a 'research peptide' or 'tanning peptide' (the latter exploiting MC1R activity); RonanRx does not fill prescriptions written for those purposes.

Bremelanotide / PT-141 Formulations and Routes

Form	Concentration	Description
Sterile subcutaneous injection (compounded)	Custom, typically prepared on a patient-specific basis to mirror the 1.75 mg dose unless prescriber-documented variance applies	Sterile solution prepared under USP <797> standards for sterile compounding on a patient-specific prescription. Container closure, excipient profile, and concentration are documented per batch and matched to the patient's clinical profile.
Manufactured single-use autoinjector (reference product)	1.75 mg / 0.3 mL prefilled autoinjector	Vyleesi is supplied as a single-dose, single-use disposable subcutaneous autoinjector containing 1.75 mg bremelanotide in 0.3 mL solution. Administered in the abdomen or thigh; not for use more than once per 24 hours or more than eight doses per month per labeling.

Routes used in published literature: subcutaneous.

Bremelanotide / PT-141 Dosing

Route	Population	Range	Duration	Study type
Subcutaneous	Premenopausal women with acquired, generalized HSDD (Vyleesi labeled regimen)	1.75 mg subcutaneously in the abdomen or thigh approximately 45 minutes before anticipated sexual activity; no more than one dose per 24 hours; no more than 8 doses per month. Discontinue after 8 weeks if no improvement.	As-needed, ongoing while clinically beneficial	FDA-approved labeled regimen
Subcutaneous	Premenopausal women with female sexual dysfunctions (phase 2 dose-finding range)	0.75, 1.25, or 1.75 mg subcutaneously as needed before anticipated sexual activity (phase 2b dose-finding range; 1.75 mg dose selected for phase 3)	12 weeks dose-finding period	Phase 2b randomized placebo-controlled trial

Doctor-prescribed and doctor-titrated. The Vyleesi label specifies a single 1.75 mg subcutaneous dose approximately 45 minutes before anticipated sexual activity, with the option to remain effective for up to 24 hours. The label limits use to one dose per 24-hour period and no more than eight doses per month, and recommends discontinuation after 8 weeks of use if there is no improvement in symptoms [fda_label_vyleesi].

Compounded bremelanotide preparations should mirror the manufactured-product 1.75 mg dose and the as-needed dosing schedule unless the prescriber documents a patient-specific reason for variance [safarinejad2008]. Higher doses and chronic daily dosing have not been studied for the HSDD indication and are not supported by the RECONNECT evidence [kingsberg2019]. Use for off-label male erectile dysfunction is supported only by small, dated phase 1/2 trials and is not an indication for which a labeled regimen exists [diamond2004; rosen2004; diamond2005].

Bremelanotide / PT-141 Safety

Bremelanotide safety in the RECONNECT phase 3 program and in the integrated safety analysis by Clayton et al [2]. (2022) is dominated by gastrointestinal and autonomic adverse effects. Nausea was reported in approximately 40% of bremelanotide-treated participants across the development program (vs <2% on placebo), with approximately 13% rating it as severe and approximately 8% discontinuing for nausea [41]. Anti-emetic pre-medication is described in clinical practice as a tolerability strategy. Flushing was reported in approximately 20%, headache in approximately 11%, and injection-site reactions in approximately 13% [4].

Transient post-dose increases in blood pressure (approximately 6 mmHg systolic and approximately 3 mmHg diastolic on average, peaking 2, 4 hours after dosing) and decreases in heart rate (approximately 5 bpm) were observed across the development program [294]. These changes typically resolve within 12 hours. The Vyleesi label contraindicates use in patients with uncontrolled hypertension or known cardiovascular disease. The earlier intranasal male-ED development program was halted in 2008 over a related blood-pressure signal [78]; the subcutaneous program with the 1.75 mg dose and as-needed schedule was designed to mitigate this finding, but the autonomic effect remains a class-defining safety consideration [2].

Focal hyperpigmentation was reported in approximately 1, 3% of bremelanotide-treated participants in RECONNECT, more common in patients with darker baseline pigmentation and with more frequent dosing [429 2]. Hyperpigmentation is attributable to MC1R activity on epidermal melanocytes; reversibility on discontinuation is variable. Less common adverse effects include vomiting, paresthesia, dizziness, and fatigue. Severe hypersensitivity has not been a characteristic finding.

Important: compounded preparations may differ from the manufactured Vyleesi autoinjector in concentration, excipients, and container closure. The autonomic and hyperpigmentation profile observed in RECONNECT with the 1.75 mg single-dose autoinjector cannot be assumed to translate without modification to compounded preparations dispensed at different concentrations or with chronic dosing

schedules, and is a specific consideration in the off-label use of compounded bremelanotide for male erectile dysfunction or for chronic libido enhancement [30] [2].

Contraindications

Bremelanotide (Vyleesi) is contraindicated in patients with uncontrolled hypertension and in patients with known cardiovascular disease, on the basis of the characteristic transient post-dose blood-pressure elevation [29]. The label advises against use in patients at high risk for cardiovascular disease.

Vyleesi is not indicated for use in postmenopausal women or in men, and is not indicated for performance enhancement in patients without HSDD. It is not indicated for HSDD that is due to a co-existing medical or psychiatric condition, problems within a relationship, or the effect of a medication or drug substance. Use during pregnancy is not recommended; female patients of reproductive potential should use effective contraception during treatment and discontinue if pregnancy occurs.

Drug interactions

Bremelanotide slows gastric emptying, which can reduce or delay the absorption of orally administered medications. The Vyleesi label specifically advises that bremelanotide may decrease the exposure of orally administered drugs that depend on gastric emptying for absorption, naltrexone is the labeled example, with a documented reduction in oral naltrexone exposure that may make bremelanotide unsuitable for patients taking oral naltrexone for alcohol or opioid use disorder [29].

Concomitant use with oral hormonal contraception should be discussed with the prescriber, as the same delayed-gastric-emptying mechanism could in principle reduce contraceptive absorption. Co-administration with PDE-5 inhibitors (sildenafil, tadalafil, vardenafil) has not been systematically characterized in approved-labeling studies; some early intranasal-formulation work showed additive erectogenic effect and additive blood-pressure effect [9]. Concomitant administration with antihypertensives should consider the transient post-dose blood-pressure increase. A phase 1 study of bremelanotide co-administered with ethanol [6] did not identify a clinically significant interaction.

Adverse events

Across RECONNECT Studies 301 and 302 and the integrated phase 3 safety analysis [14], the most common adverse events on bremelanotide vs placebo were: nausea (40.0% vs 1.3%), flushing (20.3% vs 0.3%), injection-site reactions (13.2%), headache (11.3% vs 1.9%), and vomiting (4.8% vs 0.2%). Less common adverse events included cough, fatigue, hot flush, paresthesia, dizziness, and nasal congestion. Adverse-event-driven discontinuation was 18.0% on bremelanotide vs 2.2% on placebo, with nausea the most common cause of discontinuation (8% of bremelanotide-treated participants).

Focal hyperpigmentation occurred in approximately 1, 3% of bremelanotide-treated participants and was more common in patients with darker baseline pigmentation and with more frequent dosing [429]. Transient post-dose increases in systolic blood pressure (approximately 6 mmHg on average; peaking 2, 4 hours after

dosing and returning to baseline by 12 hours) and decreases in heart rate (approximately 5 bpm) were observed [29]. Serious adverse events were uncommon; the 52-week open-label safety extension [2] did not identify new safety signals beyond the phase 3 program. Pharmacovigilance for compounded melanocortin peptides is more limited than for manufactured products, and adverse events reported in off-label male-ED use of compounded preparations are not represented in the RECONNECT dataset.

Monitoring Bremelanotide / PT-141 Therapy

Baseline assessment should include a focused sexual-function history to confirm acquired, generalized HSDD per DSM-5 criteria and to exclude HSDD due to a co-existing medical or psychiatric condition, relationship factors, or medication effects. Blood pressure, heart rate, and a cardiovascular risk assessment should be documented prior to initiation. Pregnancy status should be confirmed in patients of reproductive potential, and effective contraception should be in place during treatment.

On therapy: re-assess response and tolerability after 8 weeks per the Vyleesi label, with discontinuation recommended if there is no improvement in symptoms. Patients should be counseled on the as-needed dosing schedule (no more than one dose per 24 hours, no more than eight doses per month), on the timing of administration (approximately 45 minutes before anticipated sexual activity), and on the transient post-dose blood-pressure and hyperpigmentation considerations [fda_label_vyleesi].

Bremelanotide / PT-141 in Special Populations

Bremelanotide / PT-141 Evidence Quality

Evidence supporting the manufactured Vyleesi product for acquired, generalized HSDD in premenopausal women is the two identically designed phase 3 RECONNECT trials (Studies 301 and 302) reported by Kingsberg et al. (2019) [kingsberg2019], with a long-term open-label extension by Simon et al. (2019) [simon2019] and pre-specified subgroup analyses [simon2022] and integrated safety analysis [clayton2022] published subsequently. Both pivotal trials met their co-primary endpoints. Effect sizes are statistically significant but clinically modest: the difference vs placebo on the FSFI desire subscale was approximately 0.30, 0.35 points (on a 1, 5 scale), and the proportion of patients meeting responder criteria favored bremelanotide [safarinejad2008]. Independent re-analyses [spielmans2021, spielmans2024] argue that effect sizes on patient-meaningful endpoints (e.g., sexually satisfying events) are small relative to the regulatory framing, and reviews of the broader HSDD pharmacotherapy landscape [nappi2023, barakeh2025, cipriani2023] contextualize bremelanotide alongside flibanserin and other agents.

Evidence for off-label male erectile dysfunction is limited to small, dated phase 1/2 trials with the discontinued intranasal formulation and limited subcutaneous data [diamond2004; diamond2005]. The

intranasal program was halted in 2008 over blood-pressure findings and never advanced to FDA approval. There is no phase 3 program supporting male-ED use of bremelanotide, and the safety profile (particularly the autonomic and hypertension findings that ended the original program) argues against routine off-label use.

Evidence specifically supporting compounded preparations is absent, there is no parallel efficacy or safety program for compounded subcutaneous bremelanotide. Compounded use is an extrapolation from the manufactured Vyleesi autoinjector evidence base, justified case by case by a patient-specific clinical factor that the manufactured product cannot accommodate. Compounded preparations may differ in concentration, excipient profile, and container closure; PK/PD equivalence and the autonomic side-effect profile should not be assumed to transfer without local evaluation [fda_essentially_a_copy, fda503a] [rosen2004].

Major Bremelanotide / PT-141 Clinical Studies

Study	Design	Participants	Duration	Finding
RECONNECT Studies 301 and 302 (Kingsberg 2019, Obstet Gynecol)	Two identically designed, randomized, double-blind, placebo-controlled phase 3 trials of subcutaneous bremelanotide 1.75 mg vs placebo as needed in premenopausal women with acquired, generalized HSDD	1247	24 weeks core phase	Both trials met co-primary endpoints on FSFI desire subscale (mean change vs placebo +0.30, 0.35) and FSDS-DAO item 13 [kingsberg2019]. Statistically significant improvements in 'sexually satisfying events' were small in magnitude and the subject of subsequent re-analysis. Adverse events dominated by nausea (40%), flushing (20%), and headache (11%); discontinuation for adverse events 18.0% on bremelanotide vs 2.2% placebo.
RECONNECT 52-week open-label extension (Simon 2019, Obstet Gynecol)	52-week open-label safety/efficacy extension following RECONNECT Studies 301 and 302	—	52 weeks	Long-term safety profile consistent with the 24-week phase 3 data; no new safety signals; durability of effect on desire and distress endpoints in patients who continued treatment [simon2019].
RECONNECT integrated subgroup analyses (Simon	Pre-specified and integrated subgroup analyses across	—	—	Effect on desire and distress endpoints was directionally consistent across pre-specified subgroups (age, baseline severity,

Study	Design	Participants	Duration	Finding
2022, J Women's Health)	RECONNECT Studies 301 and 302			HSDD subtype) without identifying a differential responder profile that would refine the labeled population [simon2022].
Integrated safety profile (Clayton 2022, J Women's Health)	Integrated safety analysis across the bremelanotide clinical development program (phase 1 through phase 3 RECONNECT and open-label extension)	—	—	Confirmed AE profile dominated by nausea (40%), flushing (20%), injection-site reactions (13%), headache (11%), and focal hyperpigmentation (1, 3%); transient post-dose increases in systolic blood pressure (~6 mmHg) and decreases in heart rate (~5 bpm) returning to baseline by 12 hours [clayton2022].
Phase 2b dose-finding (Clayton 2016, Women's Health)	Phase 2b randomized, placebo-controlled, dose-finding trial of subcutaneous bremelanotide 0.75, 1.25, and 1.75 mg in premenopausal women with female sexual dysfunctions	—	12 weeks	Established the 1.75 mg dose subsequently carried into phase 3 RECONNECT; demonstrated activity on FSFI and FSDS-DAO endpoints with the characteristic AE profile [clayton2016].
Subcutaneous bremelanotide in FSAD (Diamond 2006, J Sex Med)	Randomized, double-blind, placebo-controlled, cross-over study of subcutaneous bremelanotide in premenopausal women with female sexual arousal disorder using a laboratory erotic-stimulus paradigm	18	Single-dose laboratory sessions	Bremelanotide improved subjective sexual response measures versus placebo in a small early-phase study; supported the subsequent HSDD development program [diamond2006].
Intranasal PT-141 in male ED (Diamond 2004, Int J Impotence Res)	Phase 1 randomized, double-blind, placebo-controlled study of intranasal PT-141 in healthy men and men with mild-to-moderate erectile dysfunction	—	—	Intranasal PT-141 produced dose-dependent increases in penile rigidity and self-reported arousal vs placebo; transient blood-pressure increases were observed, particularly at higher doses [diamond2004].

Study	Design	Participants	Duration	Finding
Subcutaneous PT-141 in male ED (Rosen 2004, Int J Impotence Res)	Phase 1 study of subcutaneously administered PT-141 in healthy men and men with inadequate response to sildenafil	—	—	Subcutaneous PT-141 produced pharmacodynamic erectogenic effects comparable to the intranasal route; established the SC formulation that was subsequently developed for women [rosen2004].
PT-141 + sildenafil combination (Diamond 2005, Urology)	Randomized, double-blind, placebo-controlled crossover of intranasal PT-141 with low-dose sildenafil in men with erectile dysfunction	—	—	Combined PT-141 and sub-therapeutic sildenafil produced enhanced erectile response vs either alone; transient additive blood-pressure effects observed [diamond2005].
Bremelanotide salvage of sildenafil failures (Safarinejad 2008, J Urology)	Randomized, double-blind, placebo-controlled study of intranasal bremelanotide in men with erectile dysfunction who had previously failed sildenafil	342	12 weeks	Intranasal bremelanotide produced statistically significant but modest improvements in IIEF and successful intercourse rates vs placebo in sildenafil non-responders [safarinejad2008]. Last major intranasal male-ED study before program discontinuation.
Neurobiology of bremelanotide for HSDD (Pfaus 2022, CNS Spectrums)	Mechanistic review integrating preclinical and clinical pharmacology of bremelanotide for premenopausal HSDD	—	—	Synthesized the MC3R/MC4R hypothalamic mechanism with dopaminergic and oxytocinergic downstream effects, in the context of the RECONNECT phase 3 outcomes [pfaus2022].
Spielmans re-analysis of RECONNECT (Spielmans 2021, J Sex Res)	Independent re-analysis of phase 3 RECONNECT outcomes data	—	—	Argued that effect sizes on sexually satisfying events and patient-meaningful endpoints were small relative to the regulatory framing and discontinuation rates [spielmans2021].
Spielmans and Ellefson follow-up critique	Extended critique of bremelanotide phase 3 outcomes and HSDD diagnostic framing	—	—	Reiterated and extended the small-effect-size critique with a broader discussion of HSDD as a regulatory

Study	Design	Participants	Duration	Finding
(Spielmans 2024, J Sex Res)				and clinical construct [spielmans2024].
MC4R and sexual function (Van der Ploeg 2002, PNAS)	Preclinical study using MC4R-selective ligands and MC4R-knockout mice to define the receptor mediating melanocortin sexual-function effects	—	—	MC4R is the principal melanocortin receptor mediating sexual function effects in animal models; mechanistic foundation for bremelanotide and other melanocortin sexual pharmacology [vanderploeg2002].
Melanocortin agonist in female rats (Pfaus 2004, PNAS)	Preclinical study of selective facilitation of sexual solicitation behavior in female rats by a melanocortin receptor agonist	—	—	Melanocortin receptor agonism selectively increased solicitation behaviors without nonspecific locomotor stimulation; preclinical translational basis for the female-sexual-function program [pfaus2004].
Melanotan II proceptive behavior (Rössler 2006, Pharmacol Biochem Behav)	Preclinical study of melanotan II-induced proceptive sexual behaviors in female rats	—	—	Melanotan II enhanced proceptive behaviors in female rats independent of locomotor effects; reinforced the central melanocortin sexual-behavior pharmacology [rossler2006].
α-MSH analog in male ED (Wessells 2000, Urology)	Early human proof-of-concept study of an α-MSH analog (Melanotan II) in men with organic erectile dysfunction	—	—	α-MSH analog produced penile erection and increased sexual desire in men with erectile dysfunction; foundational human pharmacology that motivated subsequent bremelanotide development [wessells2000].
Bremelanotide and body weight in obese women (Spana 2022, Diabetes Obes Metab)	Two phase 1 randomized controlled trials of daily bremelanotide on body weight in obese women	—	—	Daily bremelanotide produced modest weight reductions vs placebo; a separate pharmacology program from the HSDD indication that did not progress to a weight-loss indication [spana2022].

Bremelanotide / PT-141 Pharmacokinetics & Pharmacodynamics

Pharmacokinetics

Bremelanotide is a cyclic heptapeptide (acetylated, cyclized, 1024 Da). After subcutaneous administration of 1.75 mg, peak plasma concentration is reached at approximately 1 hour, and the terminal elimination half-life is approximately 2.7 hours. Plasma protein binding is approximately 21%. The drug is eliminated primarily through renal excretion of unchanged drug and peptide hydrolysis products [fda_label_vyleesi].

The short half-life supports the as-needed (rather than chronic daily) dosing posture and limits the duration of the transient post-dose hemodynamic effects. Compounded immediate-use sterile injectable preparations may differ from the manufactured autoinjector formulation in concentration, excipient profile, container closure, and storage conditions; PK characteristics published for Vyleesi should not be assumed to translate without local stability and PK data.

Pharmacodynamics

Pharmacodynamic effects include central melanocortin receptor agonism (predominantly MC3R and MC4R) producing increases in subjective sexual desire and arousal in premenopausal women with HSDD [kingsberg2019, pfaus2022], non-selective activity at MC1R producing the characteristic focal hyperpigmentation with frequent dosing, and autonomic effects producing transient post-dose increases in systolic blood pressure (approximately 6 mmHg on average) with reflex decreases in heart rate (approximately 5 bpm) [fda_label_vyleesi, clayton2022]. Gastric emptying is delayed, which is the basis for the labeled drug-drug interaction with oral naltrexone and the prominent nausea AE.

FSFI desire subscale change and FSDS-DAO item 13 change are the principal clinically measured pharmacodynamic endpoints in HSDD. In phase 1 male-ED studies with the intranasal formulation, penile rigidity by RigiScan was the principal PD endpoint [diamond2004, rosen2004].

↓↑ Comparing Bremelanotide / PT-141 Formulations

The manufactured product is Vyleesi, a single-use disposable 1.75 mg/0.3 mL subcutaneous autoinjector. The autoinjector form factor was specifically designed to support intermittent at-home use by patients with HSDD. Other historical formulations include the discontinued intranasal PT-141 (developed for male erectile dysfunction; halted in 2008 over blood-pressure findings) and the parent compound melanotan II (used in academic pharmacology research and widely marketed online as an unregulated 'tanning peptide', not an approved formulation) [diamond2004].

Compounded sterile injectable preparations vary in concentration, excipient profile, and container closure. They are not bioequivalent to Vyleesi; clinicians should anticipate that local PK and tolerability, including the autonomic and hyperpigmentation profile, may differ from manufactured-product published data and

should re-evaluate the safety posture when prescribing compounded preparations [fda_essentially_a_copy] [fda_label_vyleesi].

Bremelanotide / PT-141 Storage and Handling

Manufactured Vyleesi autoinjectors are stored at controlled room temperature (20, 25°C; excursions permitted 15, 30°C) in the original package to protect from light. The autoinjector is single-use. Compounded sterile injectable bremelanotide is stored per the pharmacy's stability data and beyond-use date assignment under USP <797>; refrigerated storage is typical for multi-dose preparations [fda_label_vyleesi; usp_797].

Patients should be educated on storage requirements at home and on the as-needed (not chronic daily) dosing posture, particularly for the manufactured autoinjector.

Bremelanotide / PT-141 Compounding & Operations

503A compounding

Compounded bremelanotide is prepared under 503A on patient-specific prescriptions in state-licensed compounding pharmacies. RonanRx prepares sterile injectable preparations per USP General Chapter <797>, the official compendial standard for sterile pharmaceutical compounding, with documented active ingredient sourcing, gravimetric and analytical verification, sterility and endotoxin testing per the pharmacy's quality-management system, and full lot traceability [usp_797; usp_795]. For any nonsterile preparative steps the corresponding USP General Chapter <795> applies; however, the finished injectable product is governed by <797> in full.

Beyond-use dating, ingredient identity verification, sterility assurance, and stability assessment follow USP <797> requirements. Each compounded batch is documented per state board of pharmacy retention rules with full traceability from API lot through dispensing. Bremelanotide is not on the FDA drug shortage list and the section 503A(b)(1)(D) shortage exception does not apply; compounded preparations are dispensed only where a patient-specific clinical reason that the manufactured Vyleesi product cannot meet is documented by the prescriber [fda_essentially_a_copy, fda503a] [usp_797].

Pharmacist review

Each prescription for compounded bremelanotide undergoes pharmacist review prior to dispensing [fda_essentially_a_copy]. The review confirms: a documented patient-specific clinical reason that the manufactured Vyleesi 1.75 mg autoinjector is not appropriate (autoinjector device limitation, documented excipient sensitivity, or other documented factor); absence of contraindications (uncontrolled hypertension, known cardiovascular disease, pregnancy or planned pregnancy without effective contraception)

[fda_label_vyleesi]; consistency with the labeled population (acquired, generalized HSDD in premenopausal women, where Vyleesi is the reference product); and a prescribed regimen consistent with FDA-label dosing (1.75 mg as needed, no more than once per 24 hours, no more than eight doses per month) unless the prescriber documents a patient-specific reason for variance.

RonanRx does not fill prescriptions for compounded bremelanotide that read as direct-to-consumer 'libido peptide' or 'sexual wellness peptide' use, or as off-label male erectile dysfunction therapy in patients without documented PDE-5 inhibitor failure or contraindication and without documented prescriber discussion of the small, dated, intranasal-formulation evidence base [diamond2004, rosen2004, safarinejad2008] and the original intranasal-program blood-pressure findings [fda_essentially_a_copy]. The pharmacist review explicitly considers the autonomic risk profile and the focal-hyperpigmentation risk of repeated dosing.

Quality and traceability

Active pharmaceutical ingredients are sourced from FDA-registered facilities with documented certificates of analysis. Each batch is recorded with lot numbers traceable to API source, compounding date, beyond-use date, sterility test result, endotoxin test result, and dispensing pharmacist of record. Finished product lot records are retained per state board of pharmacy retention requirements.

Cold chain

Compounded sterile injectable bremelanotide is dispensed with refrigerated transport when stability data require it, with temperature monitoring through the shipment. Patients are advised to follow the pharmacy's labeled storage instructions and to inspect for temperature excursions on arrival. Manufactured Vyleesi autoinjectors are stored at controlled room temperature per labeling [fda_label_vyleesi].

Frequently Asked Questions About Bremelanotide / PT-141

Is compounded bremelanotide the same as Vyleesi?

No. Vyleesi is the FDA-approved manufactured bremelanotide product, a single-use 1.75 mg subcutaneous autoinjector indicated for acquired, generalized HSDD in premenopausal women. Compounded bremelanotide is pharmacy-prepared on a patient-specific prescription and is not bioequivalent to Vyleesi [fda_label_vyleesi]. Compounded drugs are not FDA-approved [fda503a].

When is compounded bremelanotide appropriate?

Per FDA guidance, a compounded version of an FDA-approved drug is generally restricted unless the prescriber documents a patient-specific clinical need that the manufactured product cannot meet, for example, dexterity or visual impairment that prevents safe use of the Vyleesi autoinjector, documented

excipient sensitivity, or a clinically required dose individualization [fda_essentially_a_copy]. Cost or preference does not qualify under section 503A.

Is bremelanotide approved for men?

No. Vyleesi is approved only for premenopausal women with acquired, generalized HSDD. The original PT-141 development program for male erectile dysfunction (intranasal formulation, with later subcutaneous studies) was halted in 2008 over transient hypertension findings, and no bremelanotide product has been approved for male ED [diamond2004; rosen2004]. Compounded bremelanotide for male ED is off-label and rests on a small, dated trial corpus [safarinejad2008; fda_label_vyleesi].

How well does Vyleesi work for HSDD?

In the two phase 3 RECONNECT trials, both met their co-primary endpoints on the FSFI desire subscale and the FSDS-DAO item 13 [kingsberg2019; spielmans2021]. Effect sizes are statistically significant but clinically modest (e.g., approximately 0.30, 0.35 points difference vs placebo on the 1, 5 FSFI desire subscale). Independent re-analyses have argued that effect sizes on 'sexually satisfying events' are small relative to the regulatory framing [spielmans2024]. About 18% of patients discontinue therapy for adverse events, primarily nausea [clayton2022].

What are the most common side effects?

Nausea is the dominant adverse event, reported in approximately 40% of bremelanotide-treated participants in phase 3 (severe in ~13%, leading to discontinuation in ~8%) [kingsberg2019]. Flushing (~20%), injection-site reactions (~13%), and headache (~11%) are also common. Transient post-dose increases in blood pressure (~6 mmHg systolic) and decreases in heart rate (~5 bpm) typically resolve within 12 hours. Focal hyperpigmentation occurs in 1, 3% and is more common with repeated dosing [clayton2022; fda_label_vyleesi].

Who should not take bremelanotide?

Vyleesi is contraindicated in uncontrolled hypertension and known cardiovascular disease. It is not indicated in postmenopausal women, in men, in pregnancy, or for HSDD due to a co-existing medical or psychiatric condition, relationship factors, or medication effects. Patients on oral naltrexone should not use bremelanotide, since bremelanotide reduces oral naltrexone absorption [fda_label_vyleesi].

Why is bremelanotide marketed online as a 'tanning peptide' or 'libido peptide'?

Bremelanotide is non-selective across the melanocortin receptor family. MC1R activity on epidermal melanocytes can produce skin tanning and focal hyperpigmentation; MC3R/MC4R activity in the hypothalamus mediates the sexual-function effects. Online vendors exploit this pharmacology to market bremelanotide as an unregulated 'tanning' or 'libido' peptide [pfaus2022; fda_label_vyleesi]. These uses are not FDA-approved and are not the basis for legitimate 503A patient-specific compounding at RonanRx.

Does RonanRx sell compounded bremelanotide directly to patients?

No. Compounded bremelanotide requires a patient-specific prescription written by a licensed doctor for an identified patient with a documented clinical reason that the manufactured Vyleesi product is not appropriate, plus pharmacist review before dispensing [fda_essentially_a_copy]. RonanRx is not a direct-to-consumer storefront and does not fill prescriptions for general 'libido enhancement' or off-label male ED in patients without documented medical need [fda503a].

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How to Access Bremelanotide / PT-141

Compounded Bremelanotide / PT-141 is dispensed under 503A on a patient-specific prescription. Depending on your role, the next step looks different.

FOR PRESCRIBING CLINICIANS

Offer this medication

A pharmacist will follow up within two business days. We'll cover state availability, supported formulations, and what integration looks like for your clinic.

ronanrx.com/request-partnership-call

PATIENT WITH A DOCTOR

Receive your prescription

If your doctor has prescribed Bremelanotide / PT-141, sign up so we can prepare and ship your medication. The signup wizard collects intake and connects you to the prescribing workflow.

ronanrx.com/patients

PATIENT WITHOUT A DOCTOR

Find a partner clinic

RonanRx prescribes through partner clinics — we don't initiate prescriptions on this site. Read how the referral process works and how to find a partner clinic in your state.

ronanrx.com/find-clinic

Other compounds RonanRx makes

This monograph is one of many in the RonanRx formulary. Every compound below is prepared under 503A on a patient-specific prescription. Browse the full catalog at ronanrx.com/medications and ronanrx.com/peptides, or scan the codes at right for each index.

Medications

Peptides

MEDICATIONS (40)

Alpha-Lipoic Acid (ALA) — Antioxidant & mitochondrial
Coenzyme Q10 (CoQ10) — Antioxidant & mitochondrial
Glutathione — Antioxidant & mitochondrial
NAD+ / NMN — Antioxidant & mitochondrial
Compounded Topical Anesthetics (BLT, LET) — Dermatology
Topical Minoxidil — Dermatology
Topical Tretinoin — Dermatology
Compounded Magnesium — Energy & nutritional
Cyanocobalamin — Energy & nutritional
High-Dose Vitamin D — Energy & nutritional
Hydroxocobalamin — Energy & nutritional
Iron (Compounded) — Energy & nutritional
L-Carnitine — Energy & nutritional
Methylcobalamin (B12) — Energy & nutritional
Methylfolate — Energy & nutritional
Anastrozole — Hormone optimization
Clomiphene & Enclomiphene — Hormone optimization
DHEA — Hormone optimization
Estradiol — Hormone optimization
Estriol — Hormone optimization
Human Chorionic Gonadotropin (HCG) — Hormone optimization
Pregnenolone — Hormone optimization
Progesterone — Hormone optimization
Testosterone — Hormone optimization
Compounded Metformin — Metabolic & weight
Compounded Semaglutide — Metabolic & weight
Compounded Tirzepatide — Metabolic & weight
Lipotropic Injection (MIC, MICC) — Metabolic & weight
Low-Dose Naltrexone (LDN) — Metabolic & weight
Naltrexone-Bupropion Combination — Metabolic & weight
Topiramate — Metabolic & weight
Bremelanotide / PT-141 — Sexual health
Compounded Sildenafil — Sexual health
Compounded Tadalafil — Sexual health
Trimix Injection — Sexual health
Compounded Gabapentin — Sleep & recovery
Compounded Melatonin — Sleep & recovery
Compounded T3 (Liothyronine) — Thyroid
Compounded T3/T4 Combinations — Thyroid
Compounded T4 (Levothyroxine) — Thyroid

PEPTIDES (21)

Sermorelin — Available now

Tesamorelin — Available now

AOD-9604 — Growth-hormone axis (under FDA review)

CJC-1295 — Growth-hormone axis (under FDA review)

GHRP-2 / GHRP-6 — Growth-hormone axis (under FDA review)

Hexarelin — Growth-hormone axis (under FDA review)

Ipamorelin — Growth-hormone axis (under FDA review)

MK-677 / Ibutamoren — Growth-hormone axis (under FDA review)

5-Amino 1MQ — Metabolic & longevity (under FDA review)

Epitalon / Epithalon — Metabolic & longevity (under FDA review)

MOTS-C — Metabolic & longevity (under FDA review)

Thymosin Alpha-1 / Thymalin — Metabolic & longevity (under FDA review)

DSIP, Delta Sleep-Inducing Peptide — Neuro & cognitive (under FDA review)

Selank — Neuro & cognitive (under FDA review)

Semax — Neuro & cognitive (under FDA review)

Vasoactive Intestinal Peptide (VIP) — Neuro & cognitive (under FDA review)

BPC-157 — Tissue repair (under FDA review)

KPV — Tissue repair (under FDA review)

LL-37 — Tissue repair (under FDA review)

Pentadeca Arginate (PDA) — Tissue repair (under FDA review)

TB-500 / Thymosin Beta-4 — Tissue repair (under FDA review)