

New Dosage Form – Risperidone (Rykindo®) ER injectable suspension
Shandong Luye Pharmaceutical Co. Ltd.; FDA approved January 2023

	Risperdal Consta	Rykindo
Manufacturer	Janssen Pharmaceuticals, Inc	Shandong Luye Pharmaceutical Co. Ltd.
Approval	2003	January 2023
Indication	• Schizophrenia • monotherapy or adjunctive therapy to lithium or valproate for the maintenance treatment of Bipolar I Disorder	
Injection interval	2 weeks	
Dose strengths	12.5 mg, 25 mg, 37.5 mg, 50 mg	
Dose range	12.5 mg to 50 mg every 2 weeks	
Maximum dose	50 mg every 2 weeks	
Conversion from oral tablets	Stable on ≤ 3 mg daily: 25 mg Q2 weeks Stable on >3 to ≤ 5 mg daily: 37.5 mg Q2 weeks Stable on >5 mg daily: 50 mg Q2 weeks	
	For the first 3 weeks, overlap with oral treatment	For the first week, overlap with oral treatment
Renal or Hepatic Impairment	Begin with 0.5 mg oral risperidone BID, increase to 2 mg daily the 2nd week, then to 25 mg Consta Q 2 weeks if well-tolerated.	Titrate with oral risperidone up to at least 2 mg prior to starting treatment. A lower starting dose of 12.5 mg may be appropriate for some pts
Injection site	Deltoid or gluteal	Gluteal
Injection technique	Standard	Standard
Solubilization & vehicle	Microsphere matrix in aqueous suspension	
Adverse Effects ($\geq 5\%$)	<u>Schizophrenia</u> : headache, parkinsonism, dizziness, akathisia, fatigue, constipation, dyspepsia, sedation, weight increased, pain in extremity, and dry mouth <u>Bipolar disorder</u> : weight increased, tremor and parkinsonism	
Pharmacokinetics	<ul style="list-style-type: none"> Steady-state attained after 4 injections & maintained for 4 to 6 weeks after the last injection elimination phase completes 7 to 8 weeks after the last injection 	<ul style="list-style-type: none"> Steady-state attained after 2 injections & maintained for 2 to 3 weeks after the last injection elimination phase completes ~6 weeks after the last injection Tmax: 14 days (25 mg), 17 days (50 mg)
Comments	<ul style="list-style-type: none"> Deltoid & gluteal injections at the same doses are bioequivalent & interchangeable Oral supplementation is needed for the first 3 weeks (main drug release begins from week 3 & continues up to 7 weeks) Upward dose adjustment should not be made more frequently than every 4 weeks (clinical effects take at least 3 weeks) Efficacy of 12.5 mg dose has not been investigated in clinical trials 	<ul style="list-style-type: none"> Not considered a generic equivalent to Risperdal Consta If switching from Consta to Rykindo, initiate at the same dose starting 4 weeks (no later than 5 weeks) after the last injection. Do not overlap with oral treatment. Titration should not be made more frequently than every 4 weeks.

Role in therapy

- Rykindo offers a new treatment option for schizophrenia and bipolar I disorder as an alternative to LAIs, particularly Risperdal Consta which was approved 20 years ago. It

- has a shorter initial oral risperidone overlap and the potential to improve patient adherence with fewer injections.
- Limitations include gluteal only injection site and shorter dosing interval compared to other LAIs. As the third LAI administered biweekly, following Risperdal Consta and Zyprexa Relprevv, it competes with others offering longer dosing interval and more injection sites
 - Longer intervals are beneficial for high-risk patients, such as those with recent onset, limited access to healthcare, transitioning between care settings, or needing to minimize contact during emergencies
 - Clinical studies indicate that Rykindo has a faster onset of action but a similar efficacy and safety profile to Risperdal Consta. However, Risperdal Consta has the advantage of a longer history of clinical use and an established safety profile.
 - A meta-analysis by Zhao et al. (2023) compared paliperidone palmitate (PP) and risperidone LAI in schizophrenia. They found no significant difference in efficacy or safety (TEAEs, weight gain) between the two drugs. However, PP had a significantly higher total discontinuation rate. Authors concluded that PP may not be more beneficial than risperidone LAI, and more research is needed to guide treatment decisions.
 - Risperidone LAI is currently in clinical trials, indicating potential for off-label use in treating methamphetamine dependence, alcohol use disorder, schizoaffective disorder, and attention-deficit/hyperactivity disorder and disruptive disorders.

Generic Brand	Dosage Form/Strength	Requires Adding Diluent/ inj volume	Injection Type/Sites Needle gauge & Length	Refrigerated	Administration/Comments	Cost per 12 months *
Paliperidone palmitate Invega Halfyera®	Injectable suspension 1092 mg, 1560 mg	No 3.5 mL: 1092 mg 5 mL: 1560 mg	IM Gluteal 20G, 1.5-inch	No	<ul style="list-style-type: none"> Shake syringe VERY FAST for at least 15 seconds, rest briefly & shake again for 15 seconds Administer within 5 minutes using the needles provided in the kit Inject slowly (~30 seconds) as a single injection deep into the gluteal muscle 	Up to \$39,833
Paliperidone palmitate Invega Sustenna®	Injectable suspension 39 mg, 78 mg, 117 mg, 156 mg, 234 mg	No Range: 0.25 mL (39 mg) to 1.5 mL (234 mg) [156 mg/mL]	IM Load: Deltoid only Maintenance: Deltoid or gluteal 22G, 1.5-inch 23G, 1-inch	No	Shake syringe vigorously for at least 10 seconds and select appropriate needle <ul style="list-style-type: none"> -- For deltoid inj, use 1-inch 23G needle for pts < 90 kg or 1½-inch 22G needle for pts ≥ 90 kg -- For gluteal inj, use 1½-inch 22G needle regardless of weight 	Up to \$40,177
Paliperidone palmitate Invega Trinza®	Injectable suspension 273 mg, 410 mg, 546 mg, 819 mg	No Range 0.9 mL (273 mg) to 2.6 mL (819 mg) [312 mg/mL]	IM Deltoid or gluteal 22G, 1 or 1.5-inch	No	<ul style="list-style-type: none"> Shake syringe vigorously for at least 15 seconds within 5 minutes prior to use Administer using only the needles provided in the kit 	Up to \$40,177
Risperidone Perseris®	Syringe kits: 90mg, 120 mg	Yes 0.6 mL (90 mg) 0.8 mL (120 mg)	Subcutaneous Abdomen or back of the upper arm 18G, 5/8-inch	Yes	<ul style="list-style-type: none"> Constitute by coupling the liquid & powder syringes & passing the contents back & forth between the syringes. Incorrectly mixed medication could result in incorrect dosage Administer using the prepackaged syringe 	Up to \$33,130
Risperidone Risperdal Consta®	Vial kits: 12.5 mg, 25 mg, 37.5 mg, 50 mg	Yes ~ 2 mL	IM Deltoid or gluteal 20G, 2-inch 21G, 1-inch	Yes	Administer deep IM injection into deltoid or upper outer gluteal muscle using the provided needle. Alternate between both arms or buttocks	Up to \$28,150
Risperidone Rykindo®	Kit with vial & pre- filled diluent in a syringe 12.5mg, 25mg, 37.5mg & 50mg	Yes ~ 2 mL	IM Gluteal 20G, 2-inch	Yes	Let kit reach room temperature for at least 30 minutes before use. Shake vigorously for at least 30 seconds after injecting diluent for uniform suspension. Resuspend by shaking vigorously for 20 to 30 seconds just before injection	Up to \$30,496
Risperidone Uzedly®	Suspension Prefilled Syringe 50 mg, 75 mg, 100 mg, 125 mg, 150 mg, 200 mg, 250 mg	No Range: 0.14 mL (50 mg) to 0.7 mL (250 mg)	Subcutaneous Abdomen or upper arm 21G, 5/8-inch	Yes	Administer by SQ injection in the abdomen or upper arm by a healthcare professional Let the injection reach room temperature for at least 30 minutes before use Therapeutic concentrations attained within 6 to 24 hours after the first injection	Up to \$36,960

Formulary Recommendation

Nonformulary for CareAdvantage, BHRS and HealthWorx

Rationale:

Similar active ingredient and does not provide a unique route of administration—long-acting injectable risperidone microsphere matrix in aqueous suspension
Do not provide advantage to formulary alternatives

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