SHERI SPIRT

PSYCHIATRY

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**ADDERAL**

## Pharmacology

### Mechanism of Action

Sympathomimetic amine that promotes release of dopamine and norepinephrine from their storage sites in the presynaptic nerve terminals; may also block reuptake of catecholamines by competitive inhibition.

### Absorption

Well absorbed

Onset of action: 30-60 min

Duration: 4-6 hr

Vd: 3.5-4.6 L/kg (distributes into CNS; mean CSF concentrations are 80% of plasma)

Peak plasma time: 3 hr (Adderall); 7 hr (Adderall XR)

### Metabolism

Hepatic via glucuronidation and CYP450 mono-oxygenase

### Elimination

Half-life elimination (children)

* 6-12 years: 9 hr (d-amphetamine); 11 hr (l-amphetamine)
* 12-18 years: 11 hr (d-amphetamine); 13-14 hr (l-amphetamine)

Half-life elimination (adults)

* d-amphetamine: 10 hr
* l-amphetamine: 13 hr

Excretion

* Urine; dependent on urinary pH

**Indications**

**ADHD**

Amphetamine/dextroamphetamine

* 5 mg PO qDay; may increase by 5-10 mg/day qWeek
* Not to exceed 40 mg qDay or divided q8hr

Extended release

* 20 mg PO qAM
* Not to exceed 60 mg/day

**Narcolepsy**

Amphetamine/dextroamphetamine

* 5-60 mg PO qDay; may increase by 10 mg/day qWeek
* No more than 60 mg given qDay or divided doses with intervals of 4-6 hr between doses

## Adverse Effects

### >10% (Extended Release)

Abdominal pain (11-14%)

Headache (<26%)

Insomnia (12-27%)

Loss of appetite (22-36%)

Weight loss (4-11%)

### 1-10% (Extended Release)

Anxiety (8%)

Diarrhea (2-6%)

Dizziness (2-7%)

Dry mouth (2-4%)

Dyspepsia (2-4%)

Emotional lability (2-9%)

Fatigue (2-4%)

Fever (5%)

Infection (4%)

Nausea (5-2-8%)

Nervousness (6%)

Tachycardia (6%)

Vomiting (7%)

Weight loss (4-9%)

### Postmarketing Reports

Cardiovascular: Palpitations; isolated reports of cardiomyopathy associated with chronic amphetamine use

CNS: Psychotic episodes at recommended doses, overstimulation, restlessness, irritability, euphoria, dyskinesia, dysphoria, depression, tremor, tics, aggression, anger, logorrhea, dermatillomania, paresthesia (including formication), bruxism

Eye disorders: Blurred vision, mydriasis

Gastrointestinal: Unpleasant taste, constipation, other gastrointestinal disturbances

Allergic: Urticaria, rash, hypersensitivity reactions (including angioedema and anaphylaxis); serious skin rashes (including Stevens-Johnson syndrome and toxic epidermal necrolysis)

Endocrine: Impotence, changes in libido, frequent/prolonged erections

Skin: Alopecia

Vascular disorders: Raynaud phenomenon

Musculoskeletal: Rhabdomyolysis

## Warnings

### Contraindications

Hypersensitivity

Hyperthryroidism

Glaucoma

Hypertension, advanced arteriosclerosis, symptomatic CVD

Symptomatic cardiovascular disease

Moderate-to-severe hypertension

Agitated states, history of drug abuse

MAO inhibitors given within 14 days (risk of severe hypertensive reaction)

### Cautions

Preexisting cardiac structural abnormalities associated with risk of sudden death (if abused)

Time to maximum concentration decreased when coadministered with acid-suppressing drugs (eg, proton pump inhibitors)

Associated with peripheral vasculopathy, including Raynaud phenomenon

Difficulties with accommodation and blurring of vision have been reported with stimulant treatment

May impair ability to engage in potentially hazardouse activities due to CNS effects

Potential exists for drug dependency

Use caution in hypertension, history of psychosis, seizure disorders, elderly, or Tourette's syndrome (may unmask tics)

Abrupt discontinuation may result in symptoms for withdrawal

Sudden deaths, stroke, and myocardial infarction reported in adults taking stimulants at usual doses

Patients who develop symptoms such as exertional chest pain, unexplained syncope, or other symptoms suggestive of cardiac disease during stimulant treatment should undergo a prompt cardiac evaluation

Particular care should be taken in using stimulants to treat ADHD patients with comorbid bipolar disorder because of concern for possible induction of mixed/manic episode in such patients

Aggressive behavior or hostility is often observed in children and adolescents with ADHD; monitor for the appearance of or worsening of aggressive behavior or hostility

Monitor growth of children ages 7 to 10 years during treatment with stimulants; may need to interrupt therapy in patients not growing or gaining weight as expected

Stimulants may lower convulsive threshold in patients with prior history of seizure, patients with prior EEG abnormalities in absence of seizures, and very rarely, patients without a history of seizures and no prior EEG evidence of seizures; discontinue therapy in the presence of seizures

Use with caution in patients who use other sympathomimetic drugs

Amphetamines may exacerbate motor and phonic tics and Tourette’s syndrome; perform clinical evaluation for tics and Tourette’s syndrome in children and their families prior to treating with stimulant medications

Rare instances of prolonged and sometimes painful erections (priapism), sometimes requiring surgical intervention, reported with methylphenidate products; typically not reported during initiation, but often subsequent to an increase in dose; seek immediate medical attention for abnormally sustained or frequent and painful erections

## Pregnancy & Lactation

Pregnancy category: C

Lactation: Not recommended; found in breast milk; not recommended