A Review of Selective Serotonin Reuptake Inhibitors (SSRIs):

- Mechanism of Action: This class of medications works to block the Serotonin Reuptake Transporter (SERT) which then increases levels of serotonin in the presynaptic cleft, allowing more of the molecule to bind onto the post-synaptic neuron.
- Uses: Depression, GAD, OCD, Panic disorder, PTSD (Post Traumatic Stress Disorder), Specific phobia, PMDD, to name a few! See table below.
- Fast Facts about Each SSRI:
    - **Fluoxetine (Prozac)** = Longest half-life (2-3 days), so often used in patients with non-adherence. There is a week-long oral dosage formulation available as well. There are many potential drug-drug interactions. May cause activation, so it is ideal for depressed patients with psychomotor retardation.
    - **Sertraline (Zoloft)** = well-tolerated. Sertraline has the most safety data in pregnancy among all SSRIs.
    - **Paroxetine (Paxil) =** has mild Norepinephrine Transporter-inhibitory properties. Mildly anticholinergic, so more likely to cause sedation and weight gain. Notorious for withdrawal reactions upon sudden discontinuation.
    - **Fluvoxamine (Luvox) =** useful in treatment of OCD and GAD.
    - **Citalopram (Celexa)** = includes a mixture of two enantiomers. Dose ceiling is low due to potential for QTc prolongation.
    - **Escitalopram (Lexapro)** = S-enantiomer of citalopram. Removes the antihistaminic properties, and there are no higher-dose restrictions re: QTc prolongation. Considered to be one of the best-tolerated SSRIs with the fewest CYP-mediated drug interactions; can be sedating.
- Side Effects of SSRIs:
    - Most common: Gastrointestinal symptoms (nausea, diarrhea) - resolve within several days
    - Headaches
    - Sleep disruptions and intense dreams; activation and restlessness (more common in children)
    - QTc prolongation, particularly Citalopram
    - Increased risk of Gastrointestinal bleeds due to platelet inhibition
    - Discontinuation symptoms (worst with paroxetine), so gradual taper is recommended (except for fluoxetine)
- Black Box Warning of Suicidality:
    - Found on all antidepressants – shown to increase suicidal thinking or behaviors (no increase in completed suicides, however) in patients <25 years old. Notably, the risks of not prescribing an antidepressant far outweigh the potential risk for increased suicidal thoughts in most patients. Following the placement of the Black Box Warning, SSRI (Selective Serotonin Reuptake Inhibitors) prescriptions decreased, and there was a rise in suicide numbers. As such, close follow up is recommend and to warn families of this risk at the time of starting SSRIs.

TABLE 2: Antidepressants

Generic Name (Brand Name) Year FDA Approved *[G] denotes generic availability*	Relevant FDA Indication(s) (Pediatric indications in bold)	Available Strengths (mg)	Usual Dosage Range (starting–max) (mg) Pediatric unless specified
Selective serotonin reuptake inhibitor (SSRI)			
Citalopram [G] (Celexa) 1998	MDD	10, 20, 40, 10/5 mL	10–40
Escitalopram [G] (Lexapro) 2002	**MDD (12+ yrs)**, GAD	5, 10, 20, 5/5 mL	5–20
Fluoxetine [G] (Prozac) 1987	**MDD (8+ yrs)**, **OCD (7+ yrs)**, panic disorder, bulimia, PMDD (as Sarafem)	10, 20, 40, 60, 20/5 mL 10, 20 (Sarafem)	10–60
Fluoxetine DR [G] (Prozac Weekly) 2001	MDD maintenance	90 DR	90 Qweek (adults)
Fluvoxamine [G] Luvox brand discontinued; generic only 1994	**OCD (8+ yrs)**	25, 50, 100	50–300
Fluvoxamine ER [G] (Luvox CR) 2008	OCD	100, 150 ER	100–300
Paroxetine [G] (Paxil) 1992 (Pexeva) 2003 (Brisdelle) 2013	MDD, OCD, panic disorder, social anxiety, GAD, PTSD, PMDD, menopausal hot flashes (as Brisdelle)	7.5 (Brisdelle), 10, 20, 30, 40, 10/5 mL	10–60
Paroxetine CR [G] (Paxil CR) 1999	MDD, panic disorder, social anxiety, PMDD	12.5, 25, 37.5 ER	12.5–62.5
Sertraline [G] (Zoloft) 1991	MDD, **OCD (6+ yrs)**, panic disorder, PTSD, PMDD, social anxiety	25, 50, 100, 20/mL	12.5–200

Sources:

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