Medicating children and adolescents for psychiatric problems or learning disabilities continues to be an area of controversy. There are currently two opposing poles in this discussion. On one side, there are medical professionals and counselors who believe that medications can unlock the full potential of the student to grow up and lead a healthy and productive life. The medications can also help alleviate a student’s suffering. In the “old days” it was believed that psychiatric disorders started after childhood and were the result of faulty development or flaws in the socialization process originating in the family. We now know that such disorders can begin very early in childhood or during the teen years and be independent from environmental influences. Some disorders like anxiety, depression and Attention Deficit Disorder may have biological and genetic predispositions that are exacerbated by environmental factors. Medication can help alleviate a student’s emotional suffering and allow them to be more relaxed, focused and better able to learn in the classroom.

On the other side, there are those who believe that the increasing use of medication with children and adolescents “pathologizes” normal behavior without considering the long-term biological and socio-cultural consequences. For instance, there have been concerns that Attention Deficit-Hyperactivity Disorder has been over-diagnosed in children and that
medication has been prescribed to control the behavior of children who are over-active, but not clinically hyper-active. For adolescents, depression and anxiety are often viewed as normal “teenage angst” that is too often considered a psychiatric disorder rather than part of a normal developmental process. Unfortunately, there are no easy answers to mediate these opposing views. What we do know is that psychiatric disorders and learning disabilities are very real entities for many children and teens. The National Institute of Mental Health estimates that 1 in 10 children and adolescents suffer from mental illness in the United States significant enough to cause some level of impairment, while less than 1 in 5 receives treatment for their symptoms (http://www.nimh.nih.gov/index.shtml).

What do IMSA kids bring to the table?

Some IMSA students arrive on campus with emotional and psychological issues that are being treated by an adolescent psychiatrist. Some of the more common issues would include anxiety, depression, and Attention Deficit Disorder. IMSA can easily accommodate such students and help them with the issues they are being treated for. Other students may develop some of these problems once they have been at IMSA for awhile. It is not uncommon that things like anxiety, depression or ADD are not diagnosed until the student is in a more challenging academic environment that forces these concerns to the surface. Most of the time students can be assisted through counseling to address these issues as they occur.
However, there are times when counseling is not enough and it may be recommended that a student obtain an evaluation for medication from an adolescent psychiatrist. Such a recommendation is based on the student’s self-report of their symptoms, observations in the classroom, academic progress, observations in the residence halls, and discussions with parents. We recommend that the evaluation be done by an adolescent psychiatrist rather than a general practitioner. Some general physicians are not as familiar with the medications for things like depression and anxiety, especially when it comes to treating teenagers.

**When would it be appropriate to consider medication for a student?**

The following would be signs that a medication evaluation should be considered.

- Feelings and behaviors reported by the student are having a persistent and negative impact on their daily activities.
- There are prolonged changes in sleep patterns and appetite.
- They display noticeable signs of distress like sadness, tearfulness, and anxiousness.
- You observe social withdrawal that is prolonged and out of the ordinary.
- The student is engaging in cutting, burning or other self-injurious behavior.
- Dramatic changes in grades and attendance that indicate obvious academic distress.
- Problems with attention, concentration, or homework production are affecting their classroom performance for an extended period of time.
- The student displays or reports symptoms of a mental illness that has been identified and treated in other family members.
- Counseling has not helped to alleviate the symptoms.
- There is evidence or suspicion of suicidal thoughts or actions.
- Student has been exposed to a psychological trauma or a situation that would cause severe stress.
- Any prolonged pattern of mood disturbance that has been reported by the student prior to their coming to IMSA.
- The student has learned new coping skills and is engaged in counseling, but continues to have difficulty changing their mood or behavior.

In the process of assessing a student, the counselors at IMSA may recommend an evaluation by an outside mental health professional, like a psychologist or psychiatrist. However, the decision to place a student on
medication is made between the family, the student and the physician. IMSA cannot require that a student take medication to alleviate the symptoms they are reporting. If a student is sent home for mental health reasons and is required to receive an evaluation before they can return to campus, IMSA will only enforce the recommendations of the doctor.

“To medicate or not medicate?”

Students and parents are often very reluctant to consider taking any type of medication for psychological, emotional or learning difficulties. It is also not the job or philosophy of the counselors to “push” medications on students who have such difficulties. However, we do encourage students and parents to make an informed and intelligent decision when going through the evaluation process. It is not true that taking “a pill” will solve all the problems. The student must still take an active part in their own treatment. It is also not true that all medication is bad. Sometimes students are concerned about putting something “artificial” into their bodies or that the medication will cause them to be “something they are not.” While it is true that medication of any kind is an artificial substance, it is not true that medicine “turns you into something” other than your true self. The medicine is designed only to relieve the symptoms it is prescribed for. Parents and students must weigh the “costs vs. benefits” in making a decision to try psychotropic medications. Possible side effects of the medication must also be considered and the student should be monitored closely as they go through the treatment process. Again, medication is usually considered when the feelings and behaviors reported by the student are having a persistent and negative impact on their daily activities.

Side Effects of SSRI Antidepressants

Most physicians are prescribing SSRI’s (Selective Serotonin Reuptake inhibitors) to children and adolescents. In recent years there has been some evidence that antidepressant therapy with SSRI’s causes an increase in suicidal behavior among adolescents. This prompted the FDA to put “black box” warnings on these medications. While some of the research on this topic is conflicting and there have not been enough longitudinal studies on children and adolescents, there is an indication that suicidal thinking and behavior occurs more frequently in adolescents than in adults. While the actual incidence of suicide in these studies is quite low, it is still very important to closely monitor an adolescent patient. Thoughts of suicide or a suicide attempt are one of the major reasons adolescents are referred for a medication evaluation in the first place. Therefore, an untreated mood disorder may also put a teenager at a higher risk for suicide.
Psychotropic medications, like antidepressants or tranquilizers, should never be discontinued abruptly without consulting a physician. Some of the medications have a withdrawal syndrome associated with abrupt cessation of the drug. These can range from flu-like symptoms to anxiety attacks and seizures. It is also possible that a rebound of symptoms may occur if the medication is discontinued too quickly. Most physicians will gradually reduce the dose of medication over one to two weeks, which will prevent any withdrawal symptoms.

**IMSA Psychotropic Medication Policy**

All psychotherapeutic medications or other drugs that affect the central nervous system must be registered and dispensed through the health office. Students and their parents sign a contract related to the process (see below). If a student returns to campus on the weekend or in the evening with such medications, they should be given to the RC so that they can be put in the health office.

Examples of medications to turn into the school nurse:

- Any prescription medication to treat a condition such as depression, anxiety, psychosis, ADD, ADHD, obsessive-compulsive disorder, adjustment disorder, anger, Asperger Syndrome, Tourette's Syndrome, etc., (examples include Zoloft, Prozac, Concerta, Ritalin, Lexapro, Adderall, Risperdol, Wellbutrin, Citalopram, Strattera, Clonazepam, Vyvanse, etc.) or
- A controlled substance for pain relief such as codeine (i.e. Tylenol #3 with codeine) or hydrocodone (i.e. Vicodin),
Illinois Mathematics and Science Academy

Psychotherapeutic Prescription Medication Contract

I am under a physician’s care for a diagnosis of __________________________
________________________________________________________________
________________________________________________________________

An important component of my care is the psychotherapeutic prescription medication listed below:

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<th>Name of Medication</th>
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I understand that IMSA supports my physician’s treatment goals for me: improvement of health, enhancement of well-being, and promotion of optimal functioning. I agree to obtain my medication from the IMSA Student Health Care Services Office and take it as prescribed by my physician until I am released from treatment by my physician. I agree to communicate written orders from my physician to the health office staff regarding any change in medication, dosage, and timing. I acknowledge that failure to follow my physician’s treatment recommendations may jeopardize my continued enrollment at the Academy.

I have read, and I understand, the written contract provided. My questions have been answered to my satisfaction by IMSA Student Health Care Services Office personnel. I agree to be responsible for taking care of myself appropriately.

Date__________ Student’s Signature______________________________

I have read, and I understand, the written contract provided. My questions have been answered to my satisfaction by IMSA Student Health Care Services Office personnel. I agree to be supportive of IMSA’s policies regarding the administration of psychotherapeutic prescription medication to my child/ward.

Signature of Parent/Guardian_____________________________________
Date________
How do Psychotropic Medications Work?

“Psychotropic medications are chemical substances that cross the blood-brain barrier and act primarily upon the central nervous system where they directly affect brain functions, resulting in changes in perception, mood, consciousness, cognition and behavior” (http://en.wikipedia.org/wiki/Psychoactive_drug).

Many mood and mind altering drugs fall into this class, including illegal drugs that are used for recreational purposes. For the purpose of this discussion the medications that will be described here are manufactured by pharmaceutical companies, are FDA approved for the treatment of mental and mood disorders, and must be prescribed by a medical doctor.

All psychotropic medications exert their main effects in the space between nerve cells called the synapse. The Axion sends an electrical signal that stimulates a chemical messenger called a neurotransmitter. The neurotransmitter is secreted into the synapse between the nerve cells and it plugs into the Dendrite of the
receiving nerve cell to transmit the message. Once the message is sent, the neurotransmitter disengages and is taken back up into the axon. Psychotropic medications work by changing the levels of the neurotransmitter in the synapse. As an example, Prozac blocks the re-uptake of the neurotransmitter Serotonin into the sending nerve cell. That way, more Serotonin is available to plug into the receiving nerve cell. The result is a mood-lifting effect in the central nervous system.

Types of Psychotherapeutic medications used to treat adolescents

This list is not exhaustive. The various medications listed can be easily researched on the internet. You may also contact your local pharmacist. He or she can provide handouts with prescription medications to alert you to the possible side-effects of the drug.

**Depression:** Drugs in this class target symptoms of anxiety, tension, depression, somatic symptoms (chronic pain), sleep disturbances, guilt, lack of energy, fear, apprehension and worry.

- They are taken as a course over several weeks, months or years and have a delayed onset of therapeutic action.
- **Tolerance:** patients taking antidepressants for some years will have to increase their dose to get the same therapeutic benefit.
• **Withdrawal**: especially with abrupt cessation of the drug can be mild to severe.

• Suppress REM sleep by 40-80% initially and sustained 30-50% reductions in REM.

• Things to watch for with all antidepressants:
  - Some can initially make depression worse
  - Can induce anxiety, aggression, dysphoria, suicidal thinking
  - Induce a switch from depression to mania and promote a rapid cycling pattern
  - Induce psychosis or re-activation of latent psychosis.

**Monoamine Oxidase Inhibitors (MAOI's)**

• This is one of the first medications used to treat depression. It is rarely used today because the newer medications have less severe side effects.

• Blocks the breakdown of the neurotransmitters serotonin, norepinephrine and dopamine by inhibiting the enzymes which oxidize them, thus leaving higher levels in the synapse.

• Most serious side effects involve changes in blood pressure, which can be fatal. May also promote liver inflammation, heart attack, stroke, and seizures. Must avoid many different foods including certain kinds of meat, vegetables, and dairy products (especially cheese).

• Completely abolish REM sleep

• Drugs in this class:
  - Nardil
  - Parnate

**Tricyclic Antidepressants:**

• These are also older medications that would be used today only if the patient did not respond to the newer antidepressants.

• Blocks reuptake of the neurotransmitters Serotonin, Dopamine and Norepinephrine.

• Most common side effects are dry mouth, blurred vision, urinary retention, drowsiness, tachycardia, and weight gain

• Drugs in this class:
  - Elavil (Amitriptyline)
  - Vivactil (Protriptyline)
  - Tofranil (Imipramine)
  - Surmontil (Trimipramine)
Pamelor (Nortriptyline)  Anafranil (Clomipramine)
Norpamin (Desipramine)
Sinequan (Doxepin)

Selective Serotonin Reuptake Inhibitors (SSRI's):

- These are the newest class of antidepressants and are routinely used to treat depression in adolescents.
- Exclusively blocks reuptake of the neurotransmitter Serotonin.
- Common side effects include anxiety, nervousness, insomnia, fine motor tremors, weight loss, and sexual side effects.
- Have a mild to severe withdrawal syndrome in some people.

Celexa  Lexapro
Paxil  Luvox
Prozac  Zoloft

Miscellaneous Antidepressants: Inhibit reuptake (weak or strong) of norepinephrine, serotonin, and dopamine.

Effexor  Cymbalta
Remeron  Serzone
Wellbutrin  Vestra (blocks Noradrenalin)
Trazadone  Pristiq

Strattera (first non-stimulant used to treat ADD. Is now being used as an antidepressant because it blocks the reuptake of Norepinephrine)
Anxiety: Drugs in this class target symptoms defined as an overwhelming sense of uneasiness or discomfort.

Benzodiazepines:

- Act by increasing GABA, an inhibitory neurotransmitter in the brain. Sedation is the most common adverse side effect.
- Overdoses are rarely lethal but can be dangerous if taken in combination with other drugs that depress the central nervous system (like alcohol).
- Physical dependence (tolerance and withdrawal) may occur with these medications.

  - Ativan
  - Librium
  - Tranxene
  - Valium
  - Klonopin

Anti-Panic drugs: specifically reduce the occurrence of panic attacks along with feelings of anxiety.

  - Klonopin (antiseizure)
  - Paxil (antidepressant)
  - Xanax
  - Zoloft (antidepressant)

Miscellaneous Antianxiety Agents

  - Atarax (Antihistaminic and analgesic)
  - Effexor (Antidepressant)
  - Paxil (Antidepressant)
  - Sinequan (Antidepressant)
**Obsessive Compulsive Disorder**

- **Obsession**: Recurrent and persistent thoughts, impulses, or images that are experienced at some time during the disturbance as intrusive and inappropriate and that cause marked anxiety or distress.
- **Compulsion**: Repetitive behaviors or mental acts that the person feels driven to perform in response to an obsession, or according to rules that must be applied rigidly.
- **Drugs used to treat OCD:**
  - Anafranil
  - Luvox
  - Prozac
  - Lexapro
  - Zoloft
  - Paxil
  - Celexa

**Anti-Mania Agents: Bipolar Disorder**

- Refers to periods of extreme, often inappropriate, and sometimes unpredictable mood states.
- Person tends to experience more extreme states of mood than others which can change quickly or last for months.
- Mood patterns of this nature are associated with distress and disruption and a relatively high risk of suicide.
- **Drugs used to treat Bipolar Disorder**

  **Depakote**: possibly increases concentrations of gamma-aminobutyric acid (GABA), an inhibitory neurotransmitter. Side effects can include serious, life-threatening events like liver failure, kidney failure and Pancreatitis.

  **Lithium**: alters sodium transport in nerve and muscle cells and affects a shift toward intra-neuronal metabolism of catecholamines. Toxicity can occur close to therapeutic levels in the blood. Symptoms of toxicity would include diarrhea, vomiting, drowsiness, muscular weakness and lack of coordination.
Other medications used to treat Bipolar Disorder

- Eskalith
- Symbyas
- Tegretol
- Trileptal
- Neurontin
- Lamictal
- Topamax
- Gabitril

**Psycho-Stimulants**

- Most widely studied and used class of medication in children and adolescents
- 200 controlled studies in 50 years = drugs produce robust responses in two thirds of youths diagnosed with ADHD.
- The area of dispute is diagnosis. Because these meds are perceived to be safe, they are the first line of defense when considering treatment.
- Used to treat Attention Deficit Disorder

In addition to stimulating the central nervous system, most stimulants also increase the activity of the sympathetic nervous system and may produce a sense of euphoria in many individuals. Stimulants are used therapeutically to increase or maintain alertness, either to counteract normal fatigue in situations where sleep is not practical (e.g. while operating vehicles) or to counteract abnormal states that diminish alertness (such as narcolepsy). They may also be used and sometimes abused to boost endurance and productivity as well as to suppress appetite. The euphoria produced by some stimulants leads to their recreational use.

**Drugs in this category include the following:**

- Ritalin
- Cylert
- Concerta (sustained release)
- Pemoline
- Metadate
- Modafinil
- Methylin
- Provigil
- Focalin
- Dexidrine
- Pemoline
- Cylert
- Adderall
**Risks**

- Cardiac problems due to changes in blood pressure and pulse—especially for unknown pre-existing condition.
- Strattera- warnings of increased risk of suicide: 2200 cases in US found .4% of children reported suicidal thoughts compared to no reports on a placebo.

**Antipsychotic Agents:** These medications can be used for combative and explosive behaviors, impulsivity, difficulty sustaining attention, aggressive behaviors, mood lability and poor frustration tolerance. These are also used to treat symptoms of a psychotic disorder including delusions and hallucinations. Major side effects can include extrapyramidal symptoms and Tardive Dyskinesia (a syndrome consisting of potentially irreversible, involuntary, muscle movements).

**Drugs in this category include:**

- Clozaril   Abilify (sometimes given with an antidepressant)
- Haldol    Loxitane
- Moban     Navane
- Seroquel  Compazine
- Stelazine Thorazine

Risperdal: most often used to treat delusional psychosis but also used to treat bipolar disorder, psychotic depression, OCD and Tourette syndrome.

Zyprexa: similar to Risperdal; pilot studies suggest efficacy for the treatment of some anxiety spectrum disorders like general anxiety disorder, panic disorder, post-traumatic stress disorder; used to treat anorexia nervosa; used as an adjunctive treatment for major depressive disorder with psychotic features.