

New Trends in Pharmacology and Developmental Disabilities

New Trends in Pharmacology and Developmental Disabilities


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New Developments in Pharmacology

- New medications
- Cross-diagnostic uses
- New formulations
- New delivery systems
- Generic compounds



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New Uses For Medications Commonly prescribed For People With Developmental Disabilities

New uses, warnings, and preparations for

- Anticonvulsants
- Antihypertensives
- Antacids
- Antipsychotics



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Anticonvulsants

New uses

- ▶ Mood stabilizing
- ▶ Reduction of aggression
- ▶ Pain management
- ▶ Migraine treatment

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Classes & Individual Medications as Anticonvulsants

- Hydantoins (e.g., phenytoin, mephenytoin)
- Succinimides (e.g., ethosuximide, methsuccinimide)
- Benzodiazepines (e.g., clonazepam, clorazepate)
- Carbamazepine, valproic acid, gabapentin, topiramate, felbamate, phenobarbital

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Anticonvulsants

New warnings

- No abrupt changes
- Tapered dose reduction
- Regular check-ups
- Can affect test results
- Drug interactions
 - ▶ Other CNS medications
 - ▶ Dental/Surgical/Emergency medications

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Anticonvulsants

Recent Warnings

- Suicidal ideation
- Suicidal behaviors



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Anticonvulsants

Side Effects

- Behavior changes
- Oral impacts
- Facial changes
- Hair
- Age related
- GI
- Sleep changes
- Pain
- Solar Sensitivity
- Muscle Twitching



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Anticonvulsants

Side Effects Needing Interventions

- Clumsy
- Slurred speech
- Trembling
- Vision/eye
- Mood changes
- Bone Mass
- Confusion
- Rash
- Enlarged glands
- Muscle weakness
- Fever



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Anticonvulsants

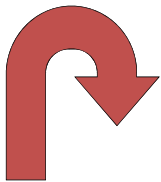
Newer preparations

- Tablet
- Capsule
- Liquid
- Sprinkle
- Parenteral pro-drug



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Antihypertensives



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Mechanisms of Action

These medications reduce blood pressure in a variety of ways:

- Reduce blood volume
- Reduce systemic vascular resistance
- Reduce cardiac output
- Action on brain regions controlling sympathetic autonomic outflow

(slows the flow)



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New Uses for Antihypertensives

- Stroke prevention
- Reduce incidence of myocardial infarction
- Minimize onset of new heart failure episodes
- Slowing GFR decline
- Shaking Leg Syndrome



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Antacids

Main categories of antacids:

- Prescription medications
- Antacids available OTC
- Chewable antacids
- Antacids in pills or capsules



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Antacid Uses

Heartburn

- PPIs – acknowledge predisposition to osteoporosis
- Histamine blockers

Differential diagnosis

- If there is no relief after days of treatment, get checked



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Cautions

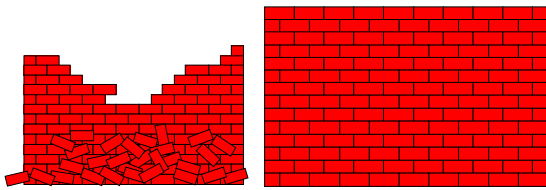
- Select the right medication for the problem
- Assure quality by source
- Exercise care so similar names of medications with different actions are not misused
- Acknowledge the potential for medication interactions

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ANTIPSYCHOTIC MEDICATIONS



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Diagnostic Categories for Antipsychotic Medications

- Schizophrenia
- Schizoaffective Disorder
- Bipolar Illness
- Personality Disorder/Trait Symptom Management
- Depression

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Diagnostic Categories for Antipsychotic Medications

- Autism
- Asperger's
- OCD
- Other Anxiety Disorders (GAD, PTSD, phobia, etc.)
- Seizure Disorders
- Tics
- Tourette Syndrome



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Cross-Diagnostic Uses for Antipsychotic Medications

- Clarify thinking
- Reduce hallucinations
- Reduce delusions
- Decrease aggression
 - Stabilize variable moods
 - Elevate depressive mood
 - Decrease overstimulation
 - Improve behavior



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Traditional or Conventional Antipsychotic Medications

(There are more):

- | | |
|-------------------------------|--------------------------------|
| ▶ Thorazine (chlorpromazine) | ■ Loxitane (loxapine) |
| ▶ Haldol (haloperidol) | ■ Navane (thiothixine) |
| ▶ Stelazine (trifluoperazine) | ■ Moban (molindone) |
| ▶ Prolixin (fluphenazine) | ■ Compazine (prochlorperazine) |
| ▶ Orap (pimozide) | ■ Sparine (promazine) |
| ▶ Mellaril (thioridazine) | ■ Serentil (mesoridazine) |



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Atypical Antipsychotics Trade & Generic Names:

- Clozaril (clozapine)
- Risperdal (risperidone)
 - ▶ Consta
- Seroquel (quetiapine)
- Zyprexa (olanzapine)
 - ▶ Relprevv
- Geodon (ziprasidone)



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Atypical Antipsychotics Trade & Generic Names:

- Abilify (aripiprazole)
 - ▶ Maintena
- Invega (paliperidone)
 - ▶ Sustenna
- Saphris (asenapine)
- Fanapt (iloperidone)
- Latuda (lurasidone)



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New Treatment Options

FDA Approved Drugs

- Saphris (asenapine)
- Fanapt (iloperidone)
- Invega Sustenna (paliperidone)
- Zyprexa Relprevv (olanzapine)
- Latuda (lurasidone)

Adjunct Therapy

- N Acetyl Cysteine (NAC)
- Lamictal (lamotrigine)
- Sarcosine



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New Antipsychotic Medication Technologies

- Laser-drilled, multiple compartment, non-biodegradable capsules
- Flash tabs, Cachet delivery systems
- Long-acting injectables
- Sublinguals

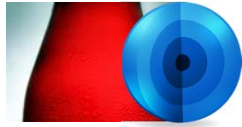


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Affective Disorder

- Major Depression
- Bipolar Illness



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Depression

- Major depression is diagnosed more commonly in the DD population than in the general population
- Episodes of depression can have strong impacts on people who have DD functioning
- Unfortunately, depression is often either undetected or detected only after long delays



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Communicating Depression

- Sometimes the non-verbal, observed changes are your 1st indication
- Sadness including crying
- Withdrawal
- Poor PO intake
- Disturbed sleep
- Irritability
- Anxiety
- Potential for mood congruent psychosis

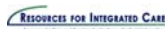


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Treating Depression

- Medications
- Support
- Psychotherapeutic interventions

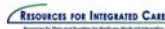


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Antidepressants

- TCA
- MAOI
- SSRI
- SNRI
- Atypical



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Tricyclic Antidepressants (TCAs): partial listing

- Asendin (amoxapine)
- Elavil (amitriptyline)
- Ludiomil (maprotiline)
- Norpramin (desipramine)
- Pamelor (nortriptyline)
- Sinequan (doxepin)
- Tofranil (imipramine)

A number of difficult side effects can be experienced with tricyclic antidepressants. High cardiotoxicity.



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Monamine Oxidase Inhibitors (MAOIs)

- Marplan (isocarboxazid)
- Nardil (phenelzine)
- Parnate (tranylcypromine)

⚡ Dietary restrictions are necessary with all MAOIs to limit tyramine intake or hypertensive crises may develop.



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Low Tyramine Diet

- The MAO inhibitors interact with this amino acid (tyramine) in certain foods and medications to produce a significant increase in blood pressure, a severe and life-threatening event. People must rigorously follow dietary instructions. In general, foods that can cause this reaction are ones that have been

pickled, fermented, smoked, or aged.



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Low Tyramine Diet

Following is the list of main foods, fluids, and medications to avoid while taking a MAOI and for the 2 weeks after the MAOI is discontinued.



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Foods and Beverages to Avoid Completely

Meats, Fish, Sauces

- Pickled Herring, dried fish, aged/dried/cured meats, unrefrigerated fermented fish, liver, caviar, fermented sausage (bologna, salami, pepperoni, summer sausage), hoisin sauce (fermented oyster sauce used in Oriental dishes), any jerky, leftovers that may be partly fermented, meat extracts, commercial gravies, crackers made with cheese, Miso (fermented soybean paste), soy sauce, teriyaki sauce



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Foods and Beverages to Avoid Completely

Vegetables/Fruits

- English broad peas, Chinese pea pods, fava beans, coffee, chocolate, banana peels, Italian or broad green beans, kim chee (fermented cabbage), lentils, lima beans, sauerkraut, spoiled or overly ripe fruits, peanuts, avocados, red plums, spinach



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Foods and Beverages to Avoid Completely

Dairy Products

- Most cheeses (exceptions are listed under Allowed Foods), yogurt

Beverages

- Chianti, aged wines, imported beers, aged beers, tea, colas
- MSG



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A Few Words About MSG

MSG is a flavor-enhancer used much more than in just Asian dishes:

- For example: Campbell's soups, Hostess Doritos, Lays flavored potato chips, Top Ramen, Betty Crocker Hamburger Helper, Heinz canned gravy, Swanson frozen prepared meals, Kraft salad dressings, especially the low fat ones. Almost all the foods at Burger King, McDonalds, Wendy's, TGIF, Chili's, Applebee's, Denny's, Kentucky Fried Chicken, and Taco Bell include MSG.
- MSG is also labeled as Hydrolyzed Vegetable Protein, Accent, Ajinomoto, Natural Meat Tenderizer



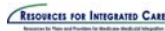
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Foods and Beverages to Avoid Completely

Combination Foods

- Breads made with aged cheeses and meats, or yeast extracts, homemade or high yeast breads, Pizza, lasagna, souffles, macaroni and cheese, quiche, liver pate, caesar salads, eggplant parmesan
- All Yeast Products (such as Brewer's yeast) Bouillon or broth with yeast and Yeast Extracts (such as Marmite and other yeast spreads)



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Medications to Avoid

- Cold Medications
- Nasal Decongestants (Tablets, Drops, Sprays, Etc.)
- Hay Fever and Allergy Medications
- Weight Reduction or Anti-appetite Medications
- “Pep” Pills
- Asthma Inhalants



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Foods and Beverages That May Be Taken Without Problems

Beverages

- White Wines

Any Baked Goods Raised With Yeast

Dairy Products

- Cottage Cheese, Cream Cheese, Milk, Cream, Ice Cream



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S Selective
S Serotonin
R Reuptake
I Inhibitors

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Selective Serotonin Reuptake Inhibitors (SSRI) Antidepressants

- Prozac (fluoxetine)
- Paxil (paroxetine)
- Zoloft (sertraline)
- Celexa (citalopram)
- Lexapro (escitalopram)
- Viibryd (vilazodone)



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SSRI Antidepressants

- SSRI Antidepressants are all chemically different from each other.
- Cannot co-administer SSRIs with MAOIs.
- A time buffer is necessary between use of all SSRIs and MAOIs.



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Side Effects of All SSRIs

Can include:

- agitation
- insomnia
- akathisia
- sexual dysfunction
- “Switching” into a hypo-manic or manic state, if the propensity was there, can also occur with SSRIs
- If side effects are uncomfortable for one SSRI, change to another SSRI



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Serotonin & Norepinephrine Reuptake Inhibitors (SNRI) Antidepressants

- Effexor
- Cymbalta
- Pristiq



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Atypical Antidepressants

- Desyrel
- Remeron
- Serzone
- Wellbutrin



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Support

- As feasible, adjust environment
- Withdrawal and activity level
- PO intake
- Medication administration
- Help with daily activities
- Increase verbal support



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Psychotherapeutic Interventions

- Communication assistance
- Behavior support including skills enhancement
- Consumer and family education
- Staff support
- Counseling
- Psychotherapy



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Bipolar Illness

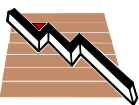
- Bipolar illness has a 2- to 3-fold greater prevalence in the cognitively impaired than in the general population
- Bipolar depression can require different treatment than major depression
- Symptom topography and disease subtype can develop and change over time requiring tracking & adjustments of interventions



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Several Subtypes

- I Manic and Depressed episodes
- II Hypomanic and Depressed episodes
- Rapid Cyclers 4+ episodes/year
- Mania can be accompanied by psychosis



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Manic Symptoms

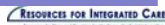
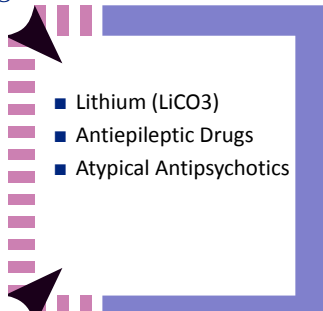
- D** Distractibility
- I** Insomnia
- G** Grandiosity
- F** Flight of Ideas
- A** Agitation
- S** Speech
- T** Thoughtlessness (Impulsivity)



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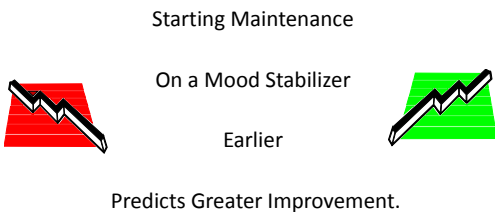
Mood Stabilizers



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Mood Stabilizers



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AED/Mood Stabilizer

- Many people with DD, who also have bipolar illness or mood instability, are being treated with topiramate (Topamax)
- Have you noted any increase in aggressive tendencies?
- Document any connection you detect between topiramate and behavioral problems



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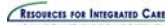
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Typical Symptoms of Mania

Behavioral Agitation

Therapeutic Responses

- Protect consumers from injury due to their own carelessness
- Protect consumers from attacks by other consumers who can be provoked by consumers' s behavior
- Insure consumers' s safety
- Insure adequate intake of food and fluids



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Typical Symptoms of Mania

Behavioral Agitation

Therapeutic Responses

- Provide a quieter environment as these consumers will hyper-react to stimuli
- Provide quiet reassurance
- Notify team & prescriber. If medically feasible, consumers should be started on a mood stabilizer & also a low dose of newer antipsychotic (such as Zyprexa, Risperdal, Abilify) until mood begins to stabilize



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Reconciling Medications

- When people take a lot of different medications, caregivers need to have a current and accurate list
- When treatment involves changing those medications, in any way, there has to be a new list
- This is called reconciling the medications



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Reconciling Medications

- Components of a current and accurate list
- Write down everything patient is taking on arrival
- Track all changes throughout care
- Highlight what should be taken now, with details
- Review with recipient and caregiver
- Give them the reconciled list



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Understanding Treatment Options for Autism

Overall, we will

- Explore the options for treating autism
- Review new research in pharmacotherapy
- Discuss treating a symptom vs. treating the syndrome



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Common Problems, Common Medications

- Difficulty interacting
 - ▶ Over-excitation, Over-reaction
 - ▶ Aggression
 - ▶ Hyperactivity
 - ▶ Uncooperative
- Symptoms
 - ▶ Impulsive
 - ▶ Tantrums
 - ▶ Peculiar Speech



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Common Problems, Common Medications

Difficulty Interacting

- Over-excitation, Over-reaction
- Aggression
- Hyperactivity
- Uncooperative

Symptoms

- Impulsive
- Tantrums
- Peculiar Speech

Medications

- Anticonvulsant
- Antipsychotic
- Antipsychotic, Anticonvulsant

Medications

- Antipsychotic, Anticonvulsant
- Antipsychotic, Anticonvulsant
- Antipsychotic



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Non-Pharmacologic Autism Treatment

Helping the client relate to others

- ▶ How to build meaningful social interaction
- ▶ Strategies for increasing eye contact
- ▶ Encourage sincere affection and expressions of joy and caring on an ongoing basis



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Non-Pharmacologic Autism Treatment

Motivating and teaching

- ▶ How to say what he wants, express love, take care of himself
- ▶ How to find clients' motivations and interests
- ▶ Dynamic, customized learning experiences
- ▶ Acquire the skills necessary for success in life (increasing attention span, cooperating with others)



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Non-Pharmacologic Autism Treatment

Speech and language development

- ▶ Increase his/her communication skills
- ▶ Functional strategies for increasing verbal communication
- ▶ Interact, make requests and express himself
- ▶ It is never "too late" for a client to learn to communicate



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Autism Treatment

Continual education, training, and community support

Creating an optimal learning environment that is comfortable, safe, and free from over-stimulation

- ▶ Filter out nearly all of the most common distractions
- ▶ Learn how to eliminate the push-pull control battles that inhibit useful interactions



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Autism Treatment

Decisive and useful handling of challenging behaviors

- ▶ Find different behaviors and more useful ways of communicating
- ▶ Practical techniques for preventing these behaviors before they happen



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Generic Compounds

- When and why a medication is offered in a generic form
- The US rules about generic compounds
- How much variability in bioavailability is allowed
- What it can mean for your practice



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Generic - When and Why

- Research and Development (R&D)
- Country of origin
- Patent longevity
- Pharmaceutical compound production
- Economic realities
- Practical implications



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Applying the Pharmacological Attributes of Generic Preparations to Clinical Practice

- Pros and cons of generic preparations
 - ▶ Bioavailability
 - ▶ Value of using generic preparations
 - ▶ Points of concern
- Transitions from brand name to generic
- Transitions from one generic formulation to another



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FDA

The US (FDA) rules about generic compounds

- 80%-125% of the Trade dose can be considered bioequivalent in the US
 - ▶ If you were taking 100 mg of a Trade med, by law in the US a generic compound could have 80 mg to 125 mg and still be called the same 100 mg Trade bioequivalent medication



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Generic AEDs

- It has been suggested that AEDs should be exempt from substitution because of the potential negative consequences
- Switching might be associated with increased use of AED and non-AED medications, and health care resources (including hospitalization)



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What Generics Mean for Your Practice

- Awareness of a change from Trade to generic
- Manage the transition as much as possible
- Observation
- Communication
- Relationship with caregivers
- Remain up-to-date on generic options



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NEW TRENDS IN TEAMWORK

How Teamwork



Pharmacological Outcomes



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Interdisciplinary Communication About New Pharmacological Developments

- Vital to best practices
- What needs to be communicated amongst ourselves
- Generic/brand name change in medication



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Communicating Information

As a unique group of caregivers we must have information shared in a way that:

- Recognizes everyone's skill level
- Acknowledges previous difficulties in training and sharing information
- Incorporates how to observe behavior
- Arranges information sharing in a logical manner
- Allows for flexibility



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Examples of Medication Effectiveness and Side Effects

- Client's communications are very difficult to follow today due to slurred speech
- This client repeatedly demonstrates hyperactivity by his inability to sit still.
- Client described his feelings as: "Sometimes my back tightens up," or "I get tongue-tied when I try to talk."
- Client noted to have rigidity and tremor of the extremities.



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Your Team Needs You

You Need Your Team

- Ask yourself if the rest of the Team knows how important their information is to you.
- The most helpful pieces of information are observations on medication effectiveness, timing, and side effects.



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How to Stay Current

- Videoconferences
- Conferences/Seminars
- Webinars
- Journals
- Colleagues
- Empiric evidence
- Participation in research
- Association membership
- Listen to others



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