Several occupational therapists contributed to the ideas that were compiled into this document related to hand dominance. A partial list of books, articles, and videos includes:


Mary Benbow stated that handedness depends on neurological inhibiting of the recessive (non-dominant) hand, so that the dominant hand can develop the precise, corrective, rapid movement without synkininesis or competition from the non-dominant hand. According to Rhoda Erhardt, the process of inhibition can also be described as dissociation, which comes in developmentally
as the infant moves from bilateral and symmetrical to unilateral and asymmetrical stages. Her website page containing FAQs about hand preference is: http://home.att.net/~rperhardt/pdq/faq_handpref.html.

Mary Benbow believes that the wrist must be properly positioned and stable in extension or poor habits will follow the child throughout his/her life. The wrist and hand are one physiological unit and must develop together. Working on a vertical surface will correct the wrist position. The thumb triad of muscles must be active or the child will develop substitute muscles that do not serve him/her well when a higher volume of writing is demanded. This will depend on pontine-cerebellar maturation of the cortical spinal system.

Keep in mind that dominance does not emerge in Kindergarten for all children. Some children do not develop well-established dominance until age 8 or 9, and there is evidence that a number of adults are competently ambidextrous for many functional tasks.

It is also important to note that not all body dominances (hand, leg and eye) are same-sided. Leg dominance is dependent upon whether the leg is stabilizing or moving. Many postural factors affect which leg a child will use to stabilize or weight bear on when doing leg activities, especially in contrived situations. There could be mixed hand dominance; e.g., a dominance for reaching out, a different dominance for tool manipulation, or even different dominances for different tools (scissors, pencils, etc.). Cutting and writing with different hands is often observed in children who prefer the opposite hand for sports activities. This is not considered abnormal, but rather one side has developed greater strength (and that hand is used for coloring, ball throwing, etc.) and the other hand has developed greater fine motor control/dexterity (used for writing/cutting). If a child uses one hand consistently for certain tasks, and the other consistently for other kinds of tasks, this is called crossed dominance. An indication of not having an established hand dominance occurs when a child constantly switches hands and uses either hand for similar tasks. The literature suggests that crossed dominance is common and is not necessarily indicative of a problem. If students with crossed dominance are functional, it is not necessary to try to change this use, although the underlying problem may be addressed if it is causing a true functional deficit in another performance area. Handedness is comprised of hardware (musculoskeletal, strength) and software (neurological), interacting to produce an efficient response system. If a child switches hands, it prevents the establishment of an efficient synergy for response.

Some therapists are of the opinion that dominance should not be forced. If it is evident that a child consistently initiates an activity with the same hand, you can encourage use of that hand. Jan Olsen (Handwriting Without Tears) suggests that a child should learn to print with one hand. Otherwise, switching cuts the practice benefit. In cases where a child switches hands, Jan suggests evaluating the child's skills with both hands to decide which hand is more skilled for
handwriting. Watch how child picks up, holds, and moves the pencil, uses the helping hand, etc., and note which hand is better at writing. Pick the more skilled hand and try to encourage use of that hand. In addition to pencil use, it would be beneficial to include tool use and play activities in determining which hand is more skilled.

Related Web Sites
http://www.tiac.net/users/seeker/ambi.html
http://www.drummingweb.com/ambidexterity.htm
http://www.user.shentel.net/finefroc/user/handedness.html
http://traevoli.com/ambidex.php3
http://www.drumplace.com/TT054.html
http://www.the-chaos-crew.com/swrpg/gm/house/ambidexterity.htm
http://www.melbay.com/dec99/98202.html
http://www.studentbmj.com/back_issues/0200/letters/37d.html
http://www.ctv.es/USERS/jcompclb/lectures/6ambidex.htm
http://www.kidsmatter.co.uk/news-and-views/newsletters/issue8.htm. (When Left can be Right)
http://www.zaner-bloser.com/html/HWsupport1.html. (The Left handed child in a Right handed world)

Screening Activities to Look at Hand Dominance and Midline Crossing
You can begin with data collection about hand use and get the teacher or other adult to record (briefly) to try to establish a pattern, even a slight preference. It is important to rely on the classroom teacher's observations in addition to yours, as it is not uncommon for the child to do one thing in the class and something different when the therapist is sitting next to him/her. We may inadvertently sit on the same side or present materials in a certain way to encourage use of one hand over the other for that particular task. If the data indicates that no hand preference at all has been established, look at production and try to determine which hand is more skilled for schoolwork (writing and drawing). Ask the student which hands feel easier to use.

1. Observe carefully what you see. When does the switching occur:
   - Partway through the activity. If you notice avoidance of midline, focus on crossing midline with both upper extremities. Try presenting objects at midline and encourage the child to finish the activity with whichever hand s/he started with. Let the child choose which hand s/he wishes to use -- a rule can be established that the hand that the child starts with is the one s/he has to finish with. The child can then choose a different hand only when the current task is completed.
   - Mixed throughout (may be weak proximal stability -- shoulder girdle or global). If a child initiates an activity with the same hand, but continues to switch hands, the switching may occur due to fatigue as hand tires. In this case, focus on strengthening to see if the child will be able to sustain grasp to complete a task.
2. What's the underlying quality of each hand. For example, in card turning using each hand, which hand is of better quality? This would involve body positioning/symmetry, eye use during the task, gross reaching out, skilled hand use, etc.

3. Several other important issues should be considered in looking at hand dominance, such as visual issues.

4. Observe trunk posture, symmetry and stability. Trunk stability can be a problem when the stabilizing side is also the dominant side as that hand is not free for dynamic moving [NDT trunk work].

5. Observe trunk rotation – does the child demonstrate good rotation? S/he may appear to have poor established dominance because s/he is using the closest hand and avoiding body rotation. It is recommended that a firm decision on lack of dominance should not be made until trunk rotation is established.


7. Consider developmental/birth delay where child will catch up to chronological age with general stimulation.

8. Observe the child informally to see which hand s/he uses spontaneously. Which hand does s/he use to scratch her/his head, rub her/his nose, and reach for her/his spoon? The unconscious actions will give a better idea than contrived activities.

9. Use a chalkboard and work with figure 8s vertically and horizontally. Have the child use the right hand to make a horizontal line from beginning to end of board surface as s/he walks the length. Then do the same with the left hand. Watch how the eyes react to tracking an object (pencil eraser is fine) vertically and horizontally. If there is consistent blinking or aversion of the eyes, it may indicate a problem with crossing midline.

10. You can do an imitation of postures which involves touching right hand to left shoulder, left hand to right knee and other similar things. If the child doesn't do well with this, check back with the teacher after a few weeks and rescreen the child.