



Summary of Research Supporting the SCERTS® Model

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This is a brief synopsis of research supporting the SCERTS model. The SCERTS model is based on a developmental framework and has incorporated evidence-based practices from the recommendations of the National Research Council (NRC, 2001) based on its review of educational treatments for children with ASD and more current research. Each of the dimensions of the SCERTS framework and each of the objectives within the curriculum are based on a range of group treatment and single case designs that examine specific intervention strategies that are incorporated in the SCERTS model as well as descriptive group research designs that document core deficits of ASD or significant predictors of outcome for individuals with ASD that are targeted in the SCERTS model. In our clinical manual, (Prizant, Wetherby, Rubin, Laurent, & Rydell, 2006; available at www.brookespublishing.com), Chapter 6 is devoted to discussing where SCERTS fits in relation to current evidence-based practice guidelines.

Using a framework adapted from Kazdin (2003) and Smith et al. (in press), we have developed 2 tables to summarize research studies that support one or more domains of the SCERTS model. We have restricted the research to the following levels of evidence, with I being the highest and IV being the lowest:

- I. True experimental group treatment designs with randomized clinical trials to document group treatment effects under controlled conditions,
- II. Quasi-experimental group treatment designs to demonstrate the feasibility of implementing the model and document group treatment effects,
- III. Single-case experimental treatment designs to examine specific intervention strategies that are incorporated in the SCERTS model, and
- IV. Case-control cross-sectional or longitudinal descriptive group research designs that document core deficits of ASD or significant predictors of outcome for individuals with ASD that are targeted in the SCERTS model.

Table 1 consists of a matrix with the 4 levels of evidence and 3 domains of the SCERTS model—social communication, emotional regulation, and transactional support, and lists references for each level. Table 2 provides an alphabetical listing of the complete references, the level of research evidence, and the SCERTS domains and components supported by each reference.

References

- Kazdin, A. (2003). *Research Design in Clinical Psychology* (4th edition). Boston: Allyn & Bacon.
- National Research Council (2001). *Educating children with autism*. Committee on Educational Interventions for children with autism. Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.
- Prizant, B., Wetherby, A., Rubin, E., Laurent, A., & Rydell, P. (2006). *The SCERTS Model: A Comprehensive Educational Approach for Children with Autism Spectrum Disorders*. Baltimore, MD: Paul H. Brookes Publishing.
- Smith, T., Scahill, L., Dawson, G., Guthrie, D., Lord, C., Odom, S., Rogers, S., & Wagner, A. (in press). Designing research studies on psychosocial interventions in autism. *Journal of Autism and Developmental Disorders*.

Table 1. Matrix of References for the 4 Levels of Research Evidence and 3 SCERTS Domains

| Level of Research Evidence | Social Communication (SC) | Emotional Regulation (ER) | Transactional Support (TS) |
|---|---|---|---|
| <p>I. Experimental group treatment with randomized clinical trials to document treatment effects under controlled conditions</p> | <p>Aldred, Green, & Adams, 2004; Drew et al., 2002; Kasari, Freeman, & Paparella, 2006; McConachie, Randle, Hammal, & Le Couteur, 2005</p> | <p>Escalona, Field, Singer, Strunck, Cullen, & Hartshorn, 2001</p> | <p>Aldred, Green, & Adams, 2004; Drew et al., 2002; Escalona, Field, Singer, Strunck, Cullen, & Hartshorn, 2001; Kasari, Freeman, & Paparella, 2006; Koegel, Bimbela & Schreibman, 1996; McConachie, Randle, Hammal, & Le Couteur, 2005;</p> |
| <p>II. Quasi-experimental group treatment to demonstrate the feasibility of implementing the model and document treatment effects</p> | <p>Mahoney & Perales, 2005; McGee, Morrier, & Daly, 1999; Ozonoff & Miller, 1995; Wetherby & Woods, 2006</p> | <p>Mahoney & Perales, 2005; Solomon, Goodlin-Jones, & Anders, 2004</p> | <p>Mahoney & Perales, 2005; McGee, Morrier, & Daly, 1999; Ozonoff & Miller, 1995; Solomon, Goodlin-Jones, & Anders, 2004; Wetherby & Woods, 2006</p> |
| <p>III. Single-case experimental treatment designs that examine specific intervention strategies that are incorporated in the SCERTS model</p> | <p>Barnhill, Cook, Tebbenkamp, & Myles, 2002; Barry et al., 2003; Carr & Durand, 1985; Charlop & Walsh, 1986; Hsiao & Bernard-Opitz, 2000; Ingersoll, Dvortcsak, Whalen, & Sikora, 2005; Kaiser, Hancock, & Nietfeld, 2000; Kashinath, Woods, & Goldstein, 2006; Laski, Charlop & Schreibman, 1988; O'Reilly, 2005; Whalen, & Schreibman, 2003</p> | <p>Bauminger, 2002; Bieberich & Morgan, 2004; Braithwaite & Richdale, 2000; Bryan & Gast, 2000; Carr & Durand, 1985; Durand & Carr, 1987; Frea, Arnold, & Vittimberger, 2001; MacDuff, Krantz, & McClanahan, 1993; O'Reilly, 2005; Pierce & Schreibman, 1994; Scattone, Wilczynski, Edwards, & Rabian, 2002; Wantanabe & Sturmey, 2003</p> | <p>Barnhill, Cook, Tebbenkamp, & Myles, 2002; Barry et al., 2003; Braithwaite & Richdale, 2000; Bryan & Gast, 2000; Charlop & Walsh, 1986; Durand & Carr, 1987; Frea, Arnold, & Vittimberger, 2001; Hsiao & Bernard-Opitz, 2000; Ingersoll, Dvortcsak, Whalen, & Sikora, 2005; Kaiser, Hancock, & Nietfeld, 2000; Kashinath, Woods, & Goldstein, 2006; Laski, Charlop & Schreibman, 1988; MacDuff, Krantz, & McClanahan, 1993; Pierce & Schreibman, 1994; Scattone, Wilczynski, Edwards, & Rabian, 2002; Wantanabe & Sturmey, 2003; Whalen, & Schreibman, 2003</p> |
| <p>IV. Descriptive group research designs that document core deficits of ASD or significant predictors of outcome for individuals with ASD that are targeted in the SCERTS model</p> | <p>Bono, Daley, & Sigman, 2004; Charman et al., 1997; Charman, et al., 2005; Dawson, Hill, Spencer, Galper, & Watson, 1990; Dawson et al., 2004; Klin, Jones, Schultz, Volkmar & Cohen, 2002; Mundy, Sigman, & Kasari, 1990; Sigman & Ruskin, 1999; Reese, Richman, Belmont, & Morse, 2005; Sigman, Dijamco, Gratier, & Rozga, 2004; Siller & Sigman, 2002; Stone, Ousley, Yoder, Hogan, & Hepburn, 1997; Stone, & Yoder, 2001; Swettenham, et al., 1998; Wetherby, Prizant, & Hutchinson, 1998; Wetherby, Watt, Morgan, & Shumway, in press; Wetherby et al., 2004; Wimpory, Hobson, & Nash, in press; Yirmiya, Sigman, Kasari & Mundy, 1992</p> | <p>Bauminger, 2004; Begeer, 2006; Bodfish, Symons, Parker, & Lewis, 2000; Capps, Yirmiya, & Sigman, 1992; Dawson, Hill, Spencer, Galper, & Watson, 1990; Dawson et al., 2004; Downs & Smith, 2004; Gillott, Furniss, & Walter, 2001; Gritti et al. 2003; Kientz & Dunn, 1997; Reese, Richman, Belmont, & Morse, 2005; Sigman, Dijamco, Gratier, & Rozga, 2004; South, Ozonoff, & McMahon, 2005; Yirmiya, Sigman, Kasari & Mundy, 1992</p> | <p>Begeer, 2006; Kientz & Dunn, 1997; Mundy, Sigman, & Kasari, 1990; Reese, Richman, Belmont, & Morse, 2005; Sigman & Ruskin, 1999; Siller & Sigman, 2002; Stone, & Yoder, 2001; Wimpory, Hobson, & Nash, in press;</p> |

| Table 2. Level of Evidence and SCERTS Domains and Components for each Reference | | | |
|---|-----------------------------------|------------------------|----------------------------------|
| References | Level of Research Evidence | SCERTS Domain | SCERTS Component |
| Aldred, C., Green, J., & Adams, C. (2004). A new social communication intervention for children with autism: Pilot randomized controlled treatment study suggesting effectiveness. <i>Journal of Child Psychology & Psychiatry</i> , 45, 1420–1430. | Level I | SC TS | JA IS LS |
| Barnhill, G., Cook, K., Tebbenkamp, K., & Myles, B.S. (2002). The effectiveness of social skills intervention targeting nonverbal communication for adolescents with Asperger syndrome and related pervasive developmental delays. <i>Focus on Autism and Other Developmental Disabilities</i> , 17, 2, 112-118 | Level III | SC TS | JA SU IS LS |
| Barry, T., Klinger, L., Lee, J., Palardy, N., Gilmore, T., & Bodin, S. (2003). Examining the effectiveness of an outpatient clinic-based social skills group for high-functioning children with autism. <i>Journal of Autism and Developmental Disorders</i> , 33, 6, 685-701. | Level III | SC TS | JA SU IS LS |
| Bauminger, N. (2002). The facilitation of social-emotional understanding and social interaction in high-functioning children with autism: Intervention outcomes. <i>Journal of Autism and Developmental Disorders</i> , 32, 283-298. | Level III | SC ER TS | JA SU MR SR IS LS |
| Bauminger, N. (2004). The expression of and understanding of jealousy in children with autism. <i>Developmental Psychopathology</i> , 16, 157-177. | Level IV Core deficits | ER | MR SR |
| Begeer, S. (2006). Attention to facial emotion expressions in children with autism. <i>Autism</i> , 10, 37-51. | Level IV Core deficits | ER TS | MR SR IS LS |
| Bieberich, A. & Morgan, S. (2004). Self-regulation and affective expression during play in children with autism or Down Syndrome: A short- term longitudinal study. <i>Journal of Autism and Developmental Disorders</i> , 34, 439-448. | Level IV Predictive relations | ER | MR SR |
| Bodfish, J., Symons, F.J., Parker, D. E., & Lewis, M.H., (2000). Varieties of repetitive behavior in autism: Comparisons to mental retardation. <i>Journal of Autism and Developmental Disorders</i> , 30, 237-243. | Level IV Core deficits | ER | SR |
| Bono, M., Daley, T. & Sigman, M. (2004). Relations among joint attention, amount of intervention and language gain in autism. <i>Journal of Autism and Developmental Disorders</i> , 34, 495-505. | Level IV Predictive relations | SC | JA |

| References | Level of Research Evidence | SCERTS Domain | SCERTS Component |
|--|--|---------------|----------------------|
| Braithwaite, K. & Richdale, A. (2000). Functional communication training to replace challenging behaviors across two behavioral outcomes. <i>Behavioral Interventions</i> , 15, p21-36. | Level III | ER TS | MR IS |
| Bryan, L.C., Gast, D.L. (2000). Teaching on-task and on-schedule behaviors to higher functioning children with autism via picture activity schedules. <i>Journal of Autism and Developmental Disorders</i> , 30, 553-567. | Level III | ER TS | SR IS LS |
| Capps, L., Yirmiya, N., & Sigman, M.D. (1992). Understanding of simple and complex emotions in non-retarded children with autism. <i>Journal of Child Psychology and Psychiatry</i> , 33, 1169-1182. | Level IV Core deficits | ER | MR SR |
| Carr, C.G. & Durand, V.M. (1985). Reducing behavior problems through functional communication training. <i>Journal of Applied Behavior Analysis</i> , 18, 111-126. | Level III | SC ER | JA SU MR |
| Charlop, M., & Walsh, M. (1986). Increasing autistic children's daily spontaneous speech. <i>Journal of Applied Behavior Analysis</i> , 19, 307-314. | Level III | SC TS | JA SU IS |
| Charman, T., Swettenham, J., Baron-Cohen, S., Cox, A., Baird, G., & Drew, A. (1997). Infants with autism: An investigation of empathy, pretend play, joint attention, and imitation. <i>Developmental Psychology</i> , 33, 781-789. | Level IV Core deficits | SC | JA SU |
| Charman, T., Taylor, E., Drew, A., Cockerill, H., Brown, J., & Baird, G. (2005). Outcome at 7 years of children diagnosed with autism at age 2; predictive validity of assessments conducted at 2 and 3 years of age and pattern of symptom change over time. <i>Journal of Child Psychology and Psychiatry</i> , 46, 500-513. | Level IV Predictive relations | SC | JA |
| Dawson, G., Hill, D., Spencer, A., Galper, L., & Watson, L. (1990). Affective exchanges between young autistic children and their mothers. <i>Journal of Abnormal Child Psychology</i> , 18, 335-345. | Level IV Core deficits | SC ER | JA MR |
| Dawson, G., Toth, K., Abbott, R., Osterling, J., Munson, J., Estes, A. & Liaw, J. (2004). Early social attention impairments in autism: Social orienting, joint attention, and attention to distress. <i>Developmental Psychology</i> , 40, 271-283. | Level IV Core deficits & Predictive relations | SC ER | JA SU MR SR |
| Downs, A. & Smith, T. (2004). Emotional understanding, cooperation, and social behavior in high-functioning children with autism. <i>Journal of Autism and Developmental Disorders</i> , 34, 625-635. | Level IV Core deficits | ER | MR SR |

| References | Level of Research Evidence | SCERTS Domain | SCERTS Component |
|--|----------------------------|---------------|----------------------|
| Drew, A., Baird, G., Baron-Cohen, S., Cox, A., Slonims, V., Wheelwright, S., Swettenham, J., Berry, B., & Charman, T. (2002). A pilot randomized control trial of a parent training intervention for pre-school children with autism: Preliminary findings and methodological challenges. <i>European Child and Adolescent Psychiatry, 11</i> , 266-272. | Level I | SC TS | JA SU IS |
| Durand, V.M., & Carr, E.G. (1987). Social influences on "self-stimulatory" behavior: Analysis and treatment application. <i>Journal of Applied Behavior Analysis, 20</i> , 119-132. | Level III | ER TS | MR SR IS LS |
| Escalona, A., Field, T., Singer, Strunck, R., Cullen, C., & Hartshorn, K. (2001). Brief report: Improvements in the behavior of children with autism following massage therapy. <i>Journal of Autism and Developmental Disorders, 31</i> , 513-516. | Level I | ER TS | MR SR IS LS |
| Frea, W.D., Arnold, C. & Vittimberger, G.L. (2001). A demonstration of the effects of augmentative communication on the extreme aggressive behavior of a child with autism within an integrated preschool setting. <i>Journal of Positive Behavior Interventions, 3</i> , 194-198. | Level III | ER TS | MR SR IS LS |
| Gillott, A., Furniss, F., & Walter, A. (2001). Anxiety in high-functioning children with autism. <i>Autism, 5</i> , 277-286. | Level IV Core deficits | ER | MR SR |
| Gritti, A., Bove, D., Di Sarno, A.M., D'Addio, A.A., Chiapparò, S., & Bove R.M. (2003). Stereotyped movements in a group of autistic children. <i>Functional Neurology, 18</i> (2), 89-94. | Level IV Core deficits | ER | MR SR |
| Hsiao, Y. & Bernard-Opitz, V. (2000). Teaching conversational skills to children with autism: Effect on the development of a theory of mind. <i>Journal of Autism and Developmental Disorders, 30</i> , 6, 569-583. | Level III | SC TS | JA SU IS LS |
| Ingersoll, B., Dvortcsak, A., Whalen, C., & Sikora, D. (2005). The effects of a developmental, social-pragmatic language intervention on rate of expressive language production in young children with autistic spectrum disorders. <i>Focus on Autism and Other Developmental Disabilities, 20</i> , 213-222. | Level II | SC TS | JA SU IS |
| Kaiser, A., Hancock, T., & Nietfeld, J. (2000). The effects of parent-implemented enhanced milieu teaching on the social communication of children who have autism. <i>Early Education and Development, 11</i> , 423-446. | Level III | SC TS | SU IS |
| Kasari, C., Freeman, S., & Paparella, T. (2006). Joint attention and symbolic play in young children with autism: A randomized controlled intervention study. <i>Journal of Child Psychology and Psychiatry, 47</i> , 611-620. | Level I | SC TS | JA SU IS |

| References | Level of Research Evidence | SCERTS Domain | SCERTS Component |
|--|----------------------------------|----------------|----------------------|
| Kashinath, S., Woods, J., & Goldstein, H. (2006). Enhancing generalized teaching strategy use in daily routines by caregivers of children with autism. <i>Journal of Speech, Language, and Hearing Research, 49</i> , 466-485. | Level III | SC TS | JA SU IS |
| Kientz, M.A. & Dunn, W. (1997). A comparison of the performance of children with and without autism on the Sensory Profile. <i>American Journal of Occupational Therapy, 51</i> , 530-537. | Level IV Core deficits | ER TS | SR IS |
| Klin, A., Jones, W., Schultz, R., Volkmar, F. R., & Cohen, D. J. (2002). Visual fixation patterns during viewing of naturalistic social situations as predictors of social competence in individuals with autism. <i>Archives of General Psychiatry, 59</i> , 809-816. | Level IV Core deficits | SC | JA |
| Koegel, R. L., Bimbela, A., & Schreibman, L. (1996). Collateral effects of parent training on family interactions. <i>Journal of Autism and Developmental Disorders, 26</i> , 347-359. | Level I | TS | IS |
| Laski, K., Charlop, M., & Schreibman, L. (1988). Training parents to use the natural language paradigm to increase their autistic children's speech. <i>Journal of Applied Behavior Analysis, 21</i> , 391-400. | Level III | SC TS | SU IS |
| MacDuff, G.S., Krantz, P.J., & McClanahan (1993). Teaching children with autism to use photographic activity schedules: Maintenance and generalization of complex response chains. <i>Journal of Applied Behavior Analysis, 26</i> , 89-97. | Level III | ER TS | SR IS LS |
| Mahoney, G., & Perales, F. (2005). Relationship-focused early intervention with children with pervasive developmental disorders and other disabilities: A comparative study. <i>Developmental and Behavioral Pediatrics, 26</i> , 77-85. | Level II | SC ER TS | SU SR MR IS |
| McConachie, H., Randle, V., Hammal, D., & Le Couteur, A. (2005). A controlled trial of a training course for parents of children with suspected autism spectrum disorders. <i>Journal of Pediatrics, 147</i> , 335-340. | Level I | SC TS | JA IS |
| McGee, G., Morrier, M., & Daly, T. (1999). An incidental teaching approach to early intervention for toddlers with autism. <i>Journal of the Association for Persons with Severe Handicaps, 24</i> , 133-146. | Level II | SC TS | SU IS LS |
| Mundy, P., Sigman, M., & Kasari, C. (1990). A longitudinal study of joint attention and language development in autistic children. <i>Journal of Autism and Developmental Disorders, 20</i> , 115-128. | Level IV Predictive relations | SC TS | JA SU IS |
| O'Reilly, M. (2005). An examination of the effects of a classroom activity schedule on levels of self-injury and engagement for a child with severe autism. <i>Journal of Autism & Developmental Disorders, 35</i> , 305-11. | Level III | ER TS | SR IS LS |

| References | Level of Research Evidence | SCERTS Domain | SCERTS Component |
|---|----------------------------------|--------------------|----------------------------|
| Ozonoff, S. & Miller, J. (1995). Teaching theory of mind: A new approach to social skills training for individuals with autism. <i>Journal of Autism and Developmental Disorders</i> , 25, 4, 415-433. | Level II | SC TS | JA IS LS |
| Pierce, K. & Schreibman, L. (1994). Teaching daily living skills to children with autism in unsupervised settings through pictorial self-management. <i>Journal of Applied Behavior Analysis</i> , 27, 471-482. | Level III | ER TS | SR LS |
| Reese, R., Richman, D., Belmont, J., & Morse, P. (2005). Functional characteristics of disruptive behavior in developmentally disabled children with and without autism. <i>Journal of Autism and Developmental Disorders</i> , 35, 419-428. | Level IV Core deficits | SC ER TS | JA MR SR IS LS |
| Scattone, D.; Wilczynski, S.M; Edwards, R.P., & Rabian, B. (2002) Decreasing disruptive behaviors of children with autism using social stories. <i>Journal of Autism and Developmental Disorders</i> , 32, 535-543. | Level III | ER TS | MR SR IS LS |
| Sigman, M., & Ruskin, E. (1999). Continuity and change in the social competence of children with autism, Down syndrome, and developmental delays. <i>Monographs of the Society for Research in Child Development</i> , 64. | Level IV Predictive relations | SC TS | JA SU IS |
| Sigman, M., Dijamco, A., Gratier, M., & Rozga, A. (2004). Early detection of core deficits in autism. <i>Mental Retardation and Developmental Disabilities Research Reviews</i> , 10, 221-233. | Level IV Core deficits | SC ER | JA SU MR |
| Siller, M. & Sigman, M. (2002). The behaviors of parents of children with autism predict the subsequent development of their children's communication. <i>Journal of Autism and Developmental Disorders</i> , 32, 77-89. | Level IV Predictive relations | SC TS | JA SU IS |
| Solomon, M., Goodlin-Jones, B., & Anders, T.F. (2004). A social adjustment enhancement intervention for high functioning autism, Asperger's Syndrome, and pervasive developmental disorder NOS. <i>Journal of Autism and Development Disorders</i> , 34, 649-668. | Level II | ER TS | MR SR IS |
| South, M., Ozonoff, S., & McMahon, W.M. (2005). Repetitive behavior profiles in Asperger Syndrome and high-functioning autism. <i>Journal of Autism and Developmental Disorders</i> , 35, 145-158. | Level IV Core deficits | ER | SR |
| Stone, W., Ousley, O., Yoder, P., Hogan, K. & Hepburn, S. (1997). Nonverbal communication in 2- and 3-year old children with autism. <i>Journal of Autism and Developmental Disorders</i> , 27, 677-696. | Level IV Core deficits | SC | JA SU |

| References | Level of Research Evidence | SCERTS Domain | SCERTS Component |
|---|--|---------------|----------------------|
| Stone, W. & Yoder, P. (2001). Predicting spoken language level in children with autism spectrum disorders. <i>Autism</i> , 5(4), 341-361. | Level IV Predictive relations | SC TS | SU IS |
| Swettenham, J., Baron-Cohen, S., Charman, T., Cox, A., Baird, G., Drew, A., et al. (1998). The frequency and distribution of spontaneous attention shifts between social and nonsocial stimuli in autistic, typically developing, and nonautistic developmentally delayed infants. <i>Journal of Child Psychology and Psychiatry</i> , 39, 747-753. | Level IV Core deficits | SC | JA |
| Wantanabe, M., & Sturmey, P. (2003). The effect of choice making opportunities during activity schedules on task engagement of adults with autism. <i>Journal of Autism and Developmental Disorders</i> , 33, 535-538. | Level III | ER TS | MR SR IS LS |
| Wetherby, A. M., Prizant, B. M., & Hutchinson, T. (1998). Communicative, social-affective, and symbolic profiles of young children with autism and pervasive developmental disorder. <i>American Journal of Speech-Language Pathology</i> , 7, 79-91. | Level IV Core deficits | SC | JA SU |
| Wetherby, A., Watt, N., Morgan, L., & Shumway, S. (in press). Social communication profiles of children with autism spectrum disorders late in the second year of life. <i>Journal of Autism and Developmental Disorders</i> . | Level IV Core deficits & Predictive relations | SC | JA SU |
| Wetherby, A. & Woods, J. (2006). Effectiveness of early intervention for children with autism spectrum disorders beginning in the second year of life. <i>Topics in Early Childhood Special Education</i> , 26, 67-82. | Level II | SC TS | JA SU IS LS |
| Wetherby, A., Woods, J., Allen, L., Cleary, J., Dickinson, H., & Lord, C. (2004). Early indicators of autism spectrum disorders in the second year of life. <i>Journal of Autism and Developmental Disorders</i> , 34, 473-493. | Level IV Core deficits | SC ER | JA SU SR MR |
| Whalen, C., & Schreibman, L. (2003). Joint attention training for children with autism using behavior modification procedures. <i>Journal of Child Psychology and Psychiatry</i> , 44, 456-468. | Level III | SC TS | JA SU IS LS |
| Wimpory, D. C., Hobson, & Nash, S. (in press). What facilitates social engagement in preschool children with autism? <i>Journal of Autism and Developmental Disorders</i> . | Level IV Predictive relations | SC TS | JA SU IS LS |
| Yirmiya, N., Sigman, M.D., Kasari, C., & Mundy, P. (1992). Empathy and cognition in high-functioning children with autism. <i>Child Development</i> , 63, 150-160. | Level IV Core deficits | SC ER | JA MR |